CANADA'S LEADING COMPUTER JOURNAL

Computer PLAYER

February 1996

Volume 5 Number 2

Free

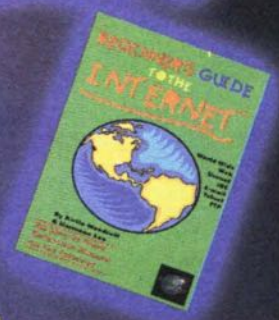
Working with your Service Bureau

Digital Video Editing on your PC

UNLIMITED INTERNET

$19.50

FREE Web Page



FREE BOOK!
Ltd. Qty. W/ Sign Up

YOUR GATEWAY *TO THE WORLD*

MasterCard VISA AMERICAN EXPRESS

- No Setup Fee
- No Hourly Charges
- Free Internet Software Kit
- Fast, Easy Access
- Free Technical Support
- Personal E-Mail Address

654-6088

* some restrictions may apply

INTERNET GATEWAY

Internet Gateway Corp.
http://www.intergate.bc.ca

NU-AGE COMPUTER PLUS

Affordable Computer & Communication Products

486DX4-100 Intel PCI
4 MB RAM exp. to 128 MB RAM
1.44 MB floppy drive, 256K cache
32 bit EIDE and floppy controller
2 serial / 1 parallel ports
Mini-size 13" case with 200 W P/S CSA
850 MB IDE mode 3 fast hard drive
101 key enchaned keyboard
14" Green SVGA N/I monitor
Cirrus Logic w/1MB Dram video card
Nu-age 2 button mouse

$1288 *Lease available*

Cyrix 586 PCI
4 MB RAM exp. to 128 MB RAM
1.44 MB floppy drive, 256K cache
32 bit EDIE and floppy controller
2 serial / 1 parallel ports
Mini-size 13" case with 200 W P/S CSA
850 MB IDE mode 3 fast hard drive
101 key enchaned keyboard
14" Green SVGA N/I monitor
Cirrus Logic w/1MB Dram video card
Nu-age 2 button mouse

$1298 *Lease available*

Pentium 75 / 90 / 100 / 120
ASUS Triton motherboard, PCI
8MB RAM exp. to 192 MB
1.44MB floppy drive, 256 K cache
Built-in 32 bit EIDE and floppy controller
2x16550 UART serial, 1 bi-directional parallel
Mid-size 19" case with 200 W P/S CSA
850 MB IDE hard drive
101 enhanced keyboard
14" Green SVGA N/I monitor
Cirrus Logic w/1 MB Dram video card

$1688 / 1798 / 1898 / 1980 *Lease available*

Professional Pentium 100/120/133
ASUS Triton motherboard, PCI
16MB RAM exp. to 192 MB
1.44MB floppy drive, 256 K cache
Built-in 32 bit EIDE and floppy controller
2x16550 UART serial, 1 bi-directional parallel
Mid-size 19" case with 200 W P/S CSA
1.2 GB IDE hard drive
101 enhanced keyboard
15" FS L.R. SVGA monitor
ATI Mach 64 w/2 MB Dram video card

$2668 / 2738 / 2798 *Lease available*

Networking Products

LANtastic AI version 6.0	$115
LANtastic Starter kit	$335
Windows Workgroup	$169
Windows Workgroup ADD-ON	$59
Novell Netware 3.12 (5 user)	$960
Novell Netware 3.12 (25 user)	$2950
NE2000 Ethernet network card	$69
NE2100 Ethernet network card	$160
CNET CN600E Ethernet card	$70
Compex 16 bit Arcnet card	$89
Intel Ethernet Express 16 bit Pro	$139
D-link Ethernet pocket adaptor	$245
Xircom Ethernet pocket adaptor	Call
D-link Ethernet concentrator	$310
Arcnet 93 Ohm Terminetor	$5
Ethernet 50 Ohm Terminator	$5

Monthly Special

1MB 30pin SIMM $39.00

Computer Problems ?

Upgrade 386's 486's, Monitor Repair, Hard drive upgrades

Notebook

JetBook Symphony 486DX4-100
- Dual Scan Color • 250MB HD **$3075**
- PCMCIA Type III • 8MB RAM
- Trackball mouse • Built in 16bit Sound Card
- Upgrade to Active Color $750
- Upgrade to Pentium 75 ..... $450
- Upgrade to 16MB RAM $775
- Upgrade to 514 MB Hard drive $275

SMARTBOOK SoundPro DX4-100
- Dual Scan Color • 8MB RAM **$2675**
- 250MB Hard Drive • PCMCIA Type III
- Trackball mouse • Built in 16bit Sound Card
- Upgrade to Active Color $750
- Upgrade to CD Version $1100
- Upgrade to 16MB RAM $775
- Upgrade to 514 MB Hard drive $275

Explorer Pentiumdia MM5000 DX2-66 $2290
- 4MB • 250MB H/D • 16 bit sound card
- PCMCIA • Trackball

Upgrade to dual scan	$690.00
Upgrade to 540 MB H/D	$299.00
Upgrade to Pen base Mono LCD	$210.00
Upgrade to Pentium	$call

We support and service:

Novell Certified NetWare Engineer

Trained and tested to provide superior NetWare Support.

Complete IBM and Macintosh network management: E-mail & FAX gateways, Remote Access, Backup, Training ...

We support and service:
Novell NetWare
Windows For Workgroup
LANtastic
Apple LocalTalk ...

We're Keeping Up with Your Networking Needs

MONITORS

ACER 14" N/I	$349
ACER 15" N/I DIGITAL	$499
ADI 4V 15" L.R. N/I .28	$550
ADI 17" 5EP	$920
COMPUPARTNER 15" N/I L.R.	$440
MEGA IMAGE 15" FS	$430
MITSUBISHI 15" DIAMOND PRO .28 DP N/I	$640
MITSUBISHI 17" DIAMOND PRO 17 TX	$1650
NEC XV 15"	$670
NEC XE15 15"	$830
PROVIEW 14" N/I L.R.	$310
PROVIEW 15" N/I L.R. F/S	$419
SONY 15 SF 15" N/I	$699
SONY 17 SF 17" N/I L.R.	$1399

PRINTERS

BROTHER HL641 300DPI	$579
BROTHER HL660 600DPI	$805
CANON BJ30 BUBBLE JET	$330
CANON BJC210 COLOUR BUBBLE JET	$379
FUJITSU DL1150 COLOUR	$329
FUJITSU DL700 Mono.	$209
HP 660C INKJET COLOR	$560
HP 5P LASERJET	$1290
HP LASERJET 4 PLUS	$2020
HP LASERJET 4M PLUS	$2780
OKIDATA OL600E LASER	$599
RAVEN 2405 24 PIN	$229
RAVEN 2465 24 PIN WIDE CARTRIDGE	$485

MODEMS

U.S. ROBOTIC 14.4 SPORTSTER INTERNAL	$129
U.S. ROBOTIC 14.4 SPORTSTER EXTERNAL	$155
U.S. ROBOTIC 28.8 SPORTSTER INTERNAL	$259
PRACTICAL PERIPHERALS EXT. 28.8 FAX	$269
ZOLTRIX 14.4 INT. FAX; VOICE MAIL	$89

FLOPPY DRIVES

1.2MB FLOPPY DRIVE	$63
1.44MB FLOPPY DRIVE	$39

VIDEO CARDS

512K SVGA VIDEO CARD	$52
TRIDENT 8900 SVGA 1MB	$89
ATI GRAPHICS WINBOOST 64 1 MB DRAM	$179
ATI GRAPHICS WINBOOST 64 2MB DRAM	$239
ATI GRAPHICS WIN TURBO Mach 64 2MB VRAM	$369
DIAMOND STEALTH 64 PCI 2MB VRAM	$369
DIAMOND VIPER SE 2MB VRAM	$439
DIAMOND PCI VIPER PRO 2MB VRAM	$569

HARD DRIVES

QUANTUM 850 MB 12MS 128K CACHE	$279
QUANTUM 1.26GB 12MS 128K CACHE	$369
W.D. 850MB 10MS 64K CACHE	$279
W.D. 1GB 10MS 64K CACHE	$329
W.D. 1.2GB 10MS 64K CACHE	$389
W.D. 1.6GB 10MS 64K CACHE	$489

RAM

1MB SIMM 70NS	$40
4MB SIMM 70NS 30PIN	$159
4MB SIMM 70NS 72PIN	$149
8MB SIMM 70NS 72PIN	$319

TAPE BACKUPS

Colorado 350MB Tape Backup Int.	$179
Colorado 800MB Tape Backup Int. T1000	$269
Conner 800 MB Tape Backup Ext.	$399
Conner 800 MB Tape Backup Int.	$249

SOFTWARE

MS WINDOWS 95 OEM (WITH SYSTEM) CD VERSION	$149
WORDPERFECT 6.0 FOR WINDOWS	$369
MICROSOFT WORKS FOR WINDOWS	$120
MICROSOFT PUBLISHER FOR WINDOWS	$158
LOTUS 123 VERSION 5 FOR WINDOWS	$369
PC ANYWHERE FOR WINDOWS	$169

Multi Media World

Panasonic CD ROM 562 B	$88	Sound Blaster 16	$109
NEC 6XE Ext. SCSI CD ROM	$799	MAD 16bit Sound Card ...	$89
NEC 6XI Int. SCSI CD ROM	$689	Phone Blaster 14.4	$339
Mitsumi 4X ELDG CD ROM	$182	Pro Sonic SCSI 16Bit	$129
Panasonic 4X ELDG CD ROM	$183	Garvis Ultra Sound Max	$219
		Altec Lansing Speakers	from $99

MS Home CD-ROM Package

MPC Multimedia PC

Mitsumi 4x speed CD
SB 16 bit sound card
M/S Encarta Package
2 shield speakers

$399.00

VISA MasterCard

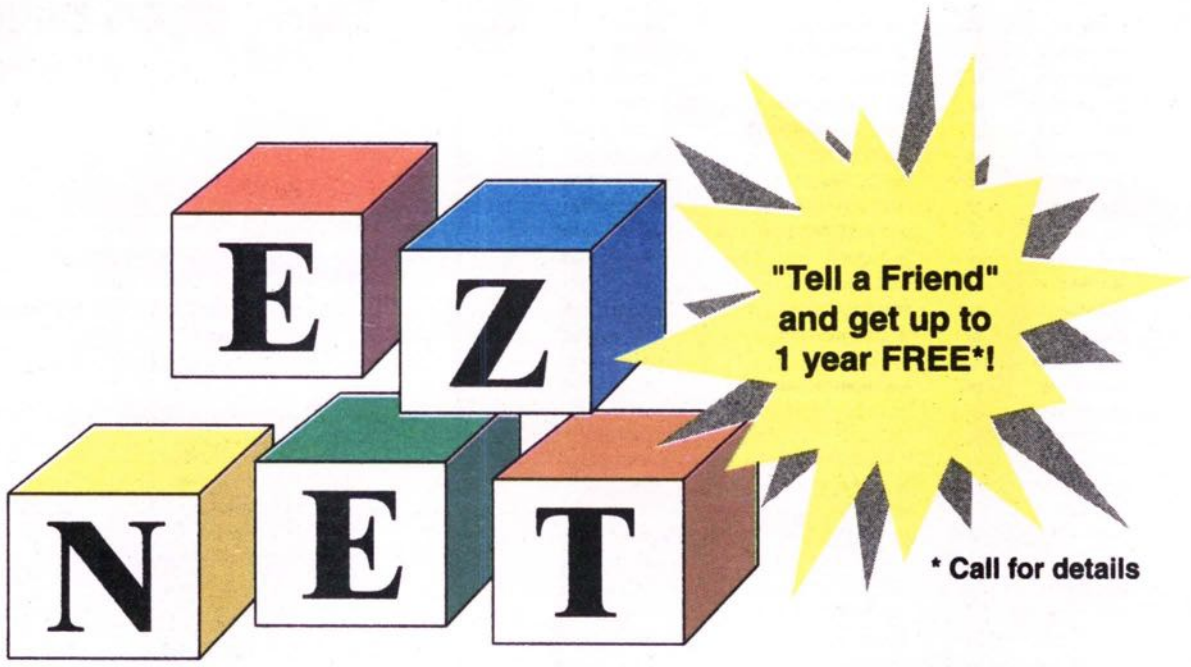
3% for Amx payment

BUSINESS HOURS:
MON-FRI 9:00-6:00
SAT: 11:00-5:00
FREE PARKING AT REAR

ALL SYSTEMS ARE CSA APPROVED.
2 YEAR PARTS & LABOUR WARRANTY.
ABOVE PRICES REFLECT 2% CASH DISCOUNT.
PRICES SUBJECT TO CHANGE WITHOUT NOTICE.

#6-1128 WEST BROADWAY, VANCOUVER, B.C. V6H 1G5 TEL: (604) 739-0883 FAX: (604) 739-2027

Making the Internet a **Family** Affair!



E-Z Net Internet Services Ltd.

A Black Ink Technologies company

http://www.eznet.ca

The E-Z Net Mission Statement

E-Z Net is a provider of high quality, competitively priced internet access and support services. Our survival depends on staying aware of the evolving needs of our customers, and an on-going focus on de-mystifying the internet for non-technical users. E-Z Net is committed to furthering the knowledge and use of the internet, in both home and business, as a global communication, education, and entertainment vehicle.

What Makes Us Different?

- **Choice.** E-Z Net offers two types of internet accounts: Full Net and Family Net. If you require standard internet connection with reliable access at competitive rates, Full Net's for you! Family Net, our showcase offering, is Internet access where we help parents screen material of an ***adult-oriented nature.*** Further, each Family Net account comes with 3 email addresses, so that each of Mom, Dad, and Chris/tina can have a separate mailbox without the otherwise necessary expense of completely separate user accounts. The choice ... is *yours*.
- **Services.** To complement your choice of account, turn to E-Z Net for comprehensive support services. The internet is an exciting place, but getting connected and navigating your way around isn't exactly intuitive. That's why we offer extended Telephone Support and the E-Z Net Housecall for end-to-end support defined by *your* needs. Running Windows, Win95, or OS/2 Warp? We are prepared for them all!
- **A Complete Solution.** E-Z Net has selected, from the hundreds of software packages available, a suite of premium programs we recommend to both maximise and simplify the internet experience. We can make these available to you either by diskette or, if your computer is already set-up with some kind of communications program, by transferring them from our computer to yours. Further, we include a free personal World Wide Web page (-a "personal billboard" on the internet) with each account.
- **Value.** The amount of media attention and advertising surrounding the internet makes it quite confusing as to who you should trust to "get connected". The good news is that the internet is old enough now to make shopping for it like many other shopping trips ... that is, you get what you pay for. We have structured offerings for both the novice and the expert. With our bundling of many "extras" into Family Net, and Full Net accounts from $9.95 per month, the value of E-Z Net Internet Services cannot be bettered!
- **People.** 28.8 bps Modems, ftp, telnet, www, digital lines, SLIP Access, newsgroups, hubs, ... sure, we have all that technical stuff to match the best of our competitors. But at the core of our company, and at the end of our phone lines ... are people. The best. People who thrive on helping new and experienced customers alike discover and explore this magnificent new horizon along with us.

For more information, brochures, or rates, call E-Z Net at (604) 873-8403, fax (604) 873-9021.

MasterCard VISA

...Internet Access for the Rest of Us!

index of advertisers

COMPANY NAME	PHONE	PAGE
3J COMPUTERS	(604)323-9859	5
ABLE RENTALS	(604)521-6904	67
ACCUGRAPHICS	(604)270-8545	52
ACME COMPUTERS	(604)736-3668	27
ACTIV IMAGE CENTRE	(604)925-1238	53
AE ELECTRONICS CORP.	(604)279-8867	15
ALOUETTE LASER INC.	(604)291-8442	48
ATECH COMPUTERS	(604)877-1812	31
ATECH COMPUTERS	(604)877-1863	31
BIS	(604)688-8916	68
BYTE & SOUND COMPUTER	(604)589-0388	12
CAMPUS COMPUTERS	(604)228-8080	70
CARRALL BUILDING	(604)684-2249	44
CC TECH	(604)876-7983	26
CDIS	(604)298-5400	40
CE OUTLET	(604)278-2633	20
CODYS	(604)464-5515	67
COMPU 2000	(604)436-2333	17
COMPUSERVE	1-800-487-0952	57
COMPUTER CLEARANCE	(604)879-7776	43
COMPUTER LINK	(604)657-4919	68
COMPUTER SWAP MEET	(604)438-6329	66
COMTEX MICROSYSTEMS	(604)273-8088	56
COPLES PLUS	(604)224-6225	49
CREATIVE COMPUTER	(604)318-0382	37
DIGITAL RAIN	(604)543-3025	63
DISCOUNT COMPUTER CLUB	(604)821-1108	45
E-Z Net	(604)873-8403	4
ECL	(604)266-1124	67
EPSON	800-BUY-EPSON	13
GAMES LOVERS	(604)270-7898	6
GO! ONLINE COMUNICATIONS	(604)540-0271	64
GRAFIX XPRESS	(604)270-2679	53
HOLLY COMPUTERS	(604)279-2580	42
IBC COMPUTER	(604)876-8855	9
IC TECHNOLOGY	(604)681-7057	27
ICE ONLINE	(604)482-7575	65
ICI INFOWAVE	(604)273-1368	28
INFO MEDIA	(604)739-5889	67
INTERNET DIRECT	(604)488-1900	71,72
INTERNET EXPRESS	(604)331-4638	58,59
INTERNET GATEWAY	(604)654-6088	2
INTERNET LIGHTSPEED	(604)482-1190	6
INTERNET PORTAL	(604)257-9400	62
INTERNET STORE	(604)875-6306	21
INTERTECH	(604)872-7337	22
IPC	1-800-567-7413	14
LAPRO MARKETING	(604)244-7798	7
LASER'S EDGE	(604)662-3774	49
LINOPLUS	(604)879-6603	50
LYNX INTERNET	(604)331-2511	55
MAC STATION	(604)466-0190	49
MACKIE ENTERPRISES	(604)270-3386	19
MAPLE-OAK COMPUTER	(604)681-3770	29
MICRO DRIVES CANADA	(604)244-3737	36
MICROCONCEPT	(604)730-8183	10,11
MICROSEA SYSTEMS	(604)273-9233	32
MIDAS TECHNOLOGY	(604)276-2860	30
MIND LINK	(604)668-5000	54
MINITRONICS	(604)278-0783	67
MORTIMER ONLINE	(604)294-2995	55
MYCOM COMPUTER	(604)739-2827	18
N&K COMPUTERS	(604)325-9258	33
NANTRON SYSTEMS	(604)253-1588	40
NICER COMPUTER	(604)377-4982	29
NPSNET	(604)272-2624	62
NU-AGE COMPUTERS PLUS	(604)739-0883	3
PC CONNECTIONS	(604)270-4883	30
PC PLACE	(604)572-8324	24
PC TOP	(604)879-3232	19
POWERSOFT	(604)582-7488	33
PROFORM SOFTWARE	1-800661-1961	46
PROTRON COMPUTER	(604)432-1177	67
RES ONLINE	(604)322-2194	61
ROM CITY	1-800-766-2489	41
ROMWARE	1-800-944-3369	35
RPC ELECTRONIC	(604)255-1192	24
SAMCO PRINTERS	(604)683-6991	69
SCEPTRE TECHNOLOGIES	(818)369-3698	16,60
SKYBUS	(604)482-1234	63
SPARKLE	(604)435-2338	67
STRONG COMPUTERS	(604)739-0438	22
SUNNET IMAGE	(604)437-3388	45
SUPER-BYTE	(604)463-8733	25
SURREY CONTINUING EDUCATION	(604)584-5424	18
SYSTEM PRO	(604)583-9977	21
TANGENT COMPUTERS	(604)737-9918	35
TKC KNOWLEDGE CENTRE	(604)273-1118	43
TOM LEE MUSIC	(604)685-8471	45
TRICERA COMPUTER	(604)733-5702	8
UNIVELL MICROSYSTEMS	(604)276-9986	25
V-COM COMPUTER	(604)437-8818	23
VANCOUVER ANIMATION	(604)681-4024	39
VANCOUVER FILM SCHOOL	(604)685-5808	38
VARSITY COMPUTERS	(604)222-2326	33
WARREN DENNY	(604)737-2133	51
WISECOM	(604)327-8567	8
WYSIWYG PREPRESS	(604)684-5466	51
ZAD-ALL-WIN WORKSHOP	(604)436-0333	36
ZED-DATA SYSTEMS	(604)473-9331	55

This listing is provided as a client service. Computer Player cannot be responsible for errors or omissions.

Cover Story

26 Digital Editing on Your PC

By Diana Sng

News

6 PC Pulse

Internet

20 Java and HotJava: An Introduction
By dan Debellis

54 Digital and ISDN modems
By Sean Elrington

58 Computer Conferencing on the MBONE
By Andrew David

62 ISP Demise Greatly Exaggerated
By Iain Black

Database

30 Database Developments
Access for Win 95
By John Hamm

Software reviews

32 ASAP Does a Lot with Less
By Alan Zisman

Hands on

35 Desktop Publishing Tips:
Corel Photo-Paint 5.0
By Swee-Sim Tan

Hardware Review

38 Fujitsu Keyboard for Windows 95
By David Anderson

39 Brothers Image Center and Willowbrook's E-Z office:
Two affordable all-in-one solutions for home and small offices
By Alan Zisman

New users

42 Yes, I will Back-up my Drive ... Tomorrow
By Rick McLaughlin

Business

46 Non-Residents Can Be Taxable In Canada
By Richard K. Acton

Desktop Publishing

48 The Strange (but true) Life of DTP in 1995
By Gordon Pritchard

Feature

50 GIGO: Gems In, Gems Out
The Secrets of Service Bureau Success
By WYSIWYG Prepress

Next Issue ...

Focus-On: World Wide Web and CD ROM Drives
Distribution Date: Feb.16, 96 **Ad. Closing Date:** Feb. 6, 96
Please call for advertising information: (604) 739-8266

LOW PRICE For Quality Components

Telelink MyPager
- New NEC Replay Numeric Pager
- Free Activation
- One Month Free Airtime
- One Month Free Voice Mail (Custom greeting & 4 hour storage)
- Batteries Included

$8.25 per month
Reg: $89.95 $69.95

HOT MONITOR DEALS
N.I. L.R.14" SVGA .28 .... $285.95
SONY 15sfII 15" .25 ..... $659.95
MAG 17" DX17F .26 ..... $889.95

HOT PRINTER DEALS
Brother HL-660 Laser $689.95
Epson Stylus IIs color 720dpi $369.95
Raven 9pin RP9100 ..... $189.95

INTEL PENTIUM 100MHZ
Intel Pentium-100 w/256k cache, Zif, Flash, Triton
Giga-byte GA-586ATE MB. 8MB RAM, 72pin, 70ns
730MB EIDE Hard Drive, 1.44MB FD
PCI Enhanced IDE (mode 3&4) w/16550x2
1 Enhanced Parallel Port (Bi-Directional)
Trident PCI 9440 Video Card
15" CSA Tower Case w/200w Power Supply
101 Enhanced Keyboard & 2B-Mouse
*** $1319 ***

WE'LL BEAT ANY PRICE
** SPECIAL **
486 DX2 - 80
4MB 72pin RAM(Max. 128M)
supports LBA. Green, DX4-100, P24T/D
1.44MB Fujitsu floppy drive
730mb EIDE 11ms Hard Drive
13" Tower w/Led & 200w P.S.
32-bit VESA controller w/2s,1p,1g
32-bit VESA SVGA 1MB
101 keys Enh. keyboard
Media mouse w/pad
REALLY SPECIAL PRICE
*** $769 ***

SPECTACULAR MODEM DEALS
MONTHLY SPECIAL
USR 28.8 Int. Fax/Modem..... $239.95
14.4 Int. S/R Fax/Modem/Voice..... $ 63.95
Zoltrix 28.8 Int. S/R Fax/Modem $169.95
USR 14.4 V.32 W/V.42 Int. Fax/modem $118.95
USR 28.8 Int. Fax/Modem/Voice..... $269.95

DRIVE SPECIALS
730MB HARD DRIVE..... $229.95
850MB HARD DRIVE..... $255.95
1.09GB HARD DRIVE..... $295.95
1.2 GB HARD DRIVE..... $335.95
1.44MB FLOPPY DRIVE ..... $ 34.95

SIMM SPECIAL
4MB SIMM 72PINS.....$132.95
8MB SIMM 72 PINS.....$264.95

CDROM SPECIAL
PANASONIC 2x CD-ROM... $ 74.95
PANASONIC 4X CD-ROM... $153.95
TOSHIBA 4x CD-ROM $168.95

Computer 3J COMPUTERS 電腦工作室

5305 Victoria Drive, Vancouver, BC, V5P 3V6
Tel:(604)323-9859, 323-9815 Fax: 323-1157
Internet E-Mail address: jane@direct.ca
Bus. hours: Mon~Sat 10am—6pm
All listed prices reflect cash discount. Price subject to changes without notice.

Chinese New Year Special!

電腦遊戲軟件 租售

PC GAMES,

CD ROMS, CD Movies

RENTALS & SALES

Hundreds of cheap, used software on consignment

Phone for our everyday low price on new and used games

GAMES LOVERS' LIBRARY

Phone about our New SAILOR MOON accessories

Bring in your Old Software For Sale or Consignment

140-9020 Capstan Way Richmond, B.C.
One block north of Cambie on Garden City, next to 7-11

Tel: (604) 270-7898

Iomega Ships First Jaz Drives

Iomega Corp. says it has begun shipping its 1GB removable disk Jaz drive.

The company, based in Roy, Utah, notes that limited quantities of the internal version are being provided "to key partners within the professional audio and video industries." Iomega adds that it expects to begin shipments of internal and external Jaz drives to retailers and others in the first quarter of 1996.

Recent press reports indicated that Iomega might be forced to delay Jaz shipments. The company has experienced serious backorder problems for several months on the parallel port version of Zip, its 100MB removable disk drive.

Epson Unveils New PC Cards

Epson America Inc. has introduced two new plug-in PC cards designed for use in portable PCs.

The EHDD340 is a 340MB high-density hard disk card. Epson says the Type III PC card is rugged enough to withstand 750Gs of impact and still execute media transfer rates of up to 6MB per second and interface transfer rates up to 12MB second. The unit is scheduled to become generally available later this month for US$599.

Epson's EFM288XJ is a 28.8K bps data/fax modem card. The Type II card features a pop-out XJack connector that allows hookups to standard telephone lines. Epson notes that the EFM288XJ complies with all major data/fax specifications. The unit will be bundled with Windows and Macintosh fax software. The card is set to ship later this month for US$299.

Mobile Computer Sales to Rise

Worldwide mobile computer sales will more than double from $30 billion in 1995 to nearly $80 billion by 2001, growing at an 18 percent compound annual rate, projects market researcher Frost & Sullivan.

A study issued by the company, which is based in Mountain View, California, finds that portable computer sales are growing twice as fast as desktop PCs, with some companies replacing desktops with portables.

The study notes that plug-in PC cards will increase their share of market revenues from 4 percent in 1995 to 9 percent in 2001, while pen and palmtop computers will hold steady at 2 percent each and portable printers will decline from their current 1 percent market level.

The study states that while pen handwriting recognition technology has improved, pen computing will not replace keyboards. The study also notes that personal digital assistants (PDAs) will continue to succeed in niche markets, but will need improvement before they become the mighty industry predicted at their introduction.

Lycos Gets CFO From Disney

World Wide Web search engine provider Lycos Inc. has named Edward M. "Ted" Philip its chief financial officer.

Philip, who was most recently vice president and assistant treasurer of The Walt Disney Company, will oversee all of Lycos' financial activities.

At Disney, Philip was responsible for several innovative financing transactions,

YOU CHOOSE !

FLAT RATE INTERNET ACCESS

$9.95* or $19.95* mo.

call 482-1190

INTERNET LIGHTSPEED TM.

WWW
Publishing Specialists

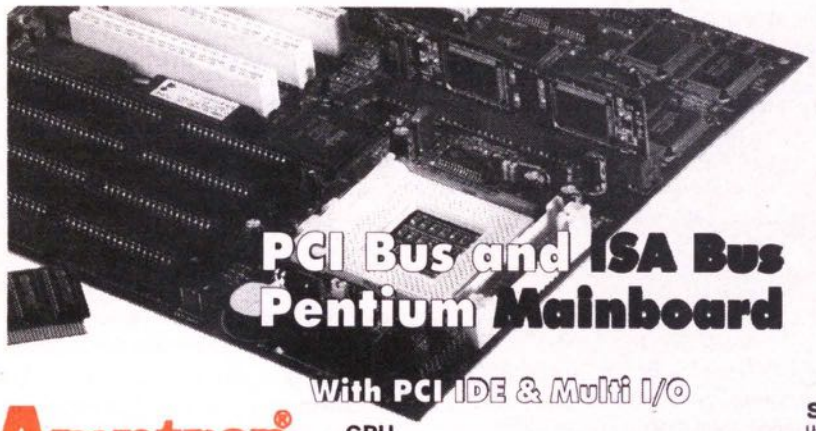
Includes: - a personal e-mail address
- Internet start-up software

Division of Warlight Industries Inc.
Serving the high tech community since 1987

*Some Restrictions Apply

YOUR ONE-STOP SOURCE!

Broad Selection **Competitive Prices** **Brand Names**



Amptron®

Intel Pentium Motherboard
with Triton Chipset

CPU
Intel Triton PCIset support
Pentium 75/90/100/120/133/150/167/180/200 MHz processors
Supports Voltage Regulator Module (VRAM)

Architecture
3 PCI Local Bus slots and 4x16 bits ISA Bus slots,
All three PCI slots support Master mode.
Achieve high performance transfer rate 16.67MB/S for bus master,
PCI Bus bandwidth up to 100MB/S

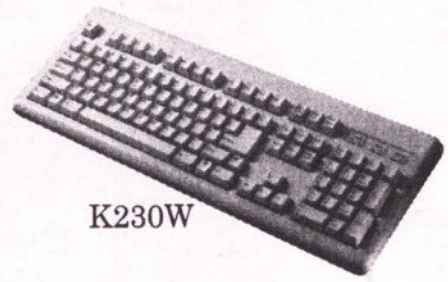
Cache Memory Slot
Level 2 cache 256/512 KB Asynchronous or
256KB Pipeline burst SRAM module

System Memory
Use 72-pin SIMM modules x 4 auto banking
in multiple configuration up to 128MB,
Supports EDO mode DRAMs.

I/O SPEC
2 PCI IDE interface on board support ATA spec. up to mode 4
IDE interface- Bus master support,
Support two 16550 compatible enhanced serial port,
Floppy disk interface and
EPP/ECP high performance parallel port function

System BIOS
Support Flash ROM, Plug and Play, Green Feature,
NCR 810 SCSI BIOS

MONTEREY
Windows 95 Keyboard



K230W

SCEPTRE
New Soundx
486DX4-100 to Pentium 120
Touchpad, FDD/Adaptor/2nd Battery swapable/
IR wireless port/16 bit Stereo w/ 2 speakers

SCEPTRE
High Resolution Monitors
Featuring 14", 15", 17", and 21"

- 3 Yr Warranty
- Low Radiation
- Flat screen
- Ultra-Sharp

SCEPTRE
Multimedia Notebooks
486 66/100 or Pentium 75/90

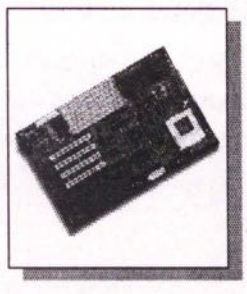
- SoundBlaster
- Modular
- NiMH Batt.
- Mono, Active, & DualScan

SCEPTRE
LCD Pannel
DualScan & Active Matrix LCDs

- Space Saving (1.5" deep)
- Portable & Tiny footprint
- No radiation
- PCI or Vesa interface
- Low power consumption

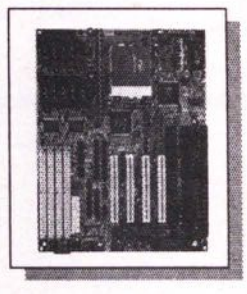
Acer
AcerOpen Systems
Pentium & 486 Systems

- Modular Design
- Consistent, Reliable Parts
- Energy Star Compliant
- Home & Multimedia PCs
- Workstations & Servers



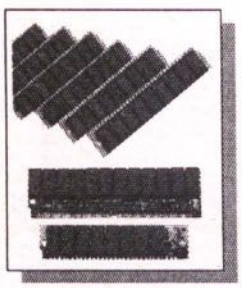
Acer
Motherboards
Pentium & 486 Motherboards

- Acer
- Leo (FIC)
- Gigabyte
- 72-pin & 30-pin SIMMs
- Energy Star Compliant



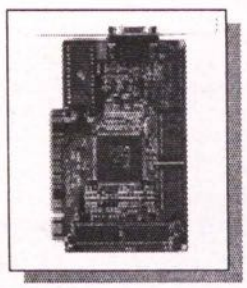
Amptron
Pentium Motherboards
System Components

- IP54NP4 Dual Pentium
- EP54NP4 EISA Dual Pentium
- P55TP4XE, Pentium 75-133
- EDO & Pipeline Burst SRAM
- Plug 'n Play, Flash BIOS



TOSHIBA
Memory Modules
Premium Japanese & US RAM

- Toshiba
- Hitachi
- Digital
- NEC, OKI
- TexasInstruments



DIAMOND MULTIMEDIA
Peripherals

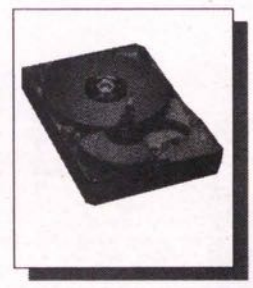
- S3, Trident, Cirrus Logic,
- ATI, Diamond Video Cards
- 14.4 & 28.8 FaxModems
- Floppy Drives & Mice
- IDE & SCSI Adaptors

KME
KME Cases & Power Supplies

- Minitower: 13"
- Tower: 15", 19", 21"
- Sever Tower: 26" & Dual
- CSA Power Supplies
- 200W, 230W, 250W, 300W

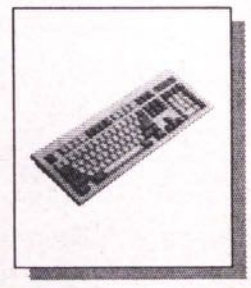
CREATIVE
Multimedia

- Creative Labs
- Turtle Beach
- Sony, Panasonic, Toshiba
- CD Titles & Bundles
- EVER Multimedia cases



WESTERN DIGITAL
Hard Drives

- Western Digital, Seagate
- Maxtor, Conner, Quantum
- IDE from 560MB to 1.6GB
- SCSI from 540MB to 9.0GB
- System & Notebook Drives



Proxcel
Keyboards & Mice

- Proxcel
- Focus
- Keytronic
- Chicony
- NMB

Distributors:

LAPRO Marketing
Unit 510, 3771 Jacombs Rd Richmond, BC
Tel (604) 244-7798 Fax (604) 244-7796

Dealers:

Nicer Computer & Services
Tel (604) 377-4982
Fax (604) 435-3222

Quantum Technologies
Unit 125, 3751 Jacombs Rd Richmond, BC
Tel (604) 244-5952 Fax (604) 244-5953

Tricera Computer Centre

203 1836 West 5th Avenue at Burrard Street Phone 733-5702
EPSON Authorized Warranty Service - Supplies - Sales

EPSON ES1200C Scanner

EPSON Stylus Color Pro XL

Full Bleed 11 x 17

13 x 19 Paper Size

Agfa Arcus 36 Bit Scanning

$2250

35mm Slides and negatives

Polaroid SprintScan35 30 Bit

Iomega Zip Drives

$295

Scanner Rental

High resolution 35mm slide, transparency, & photo scanners for only $20 per hour.
Pentium or Power Mac Workstation
Iomega Zip Drive

Reservations recommended

4 x 5 Wacom Art Pad II $230

including approximately $1.5 billion in film financings, $14 billion in bank financings and the first 100-year bond issue sold by a corporation in more than 40 years.

Philip was also instrumental in structuring the acquisition financing for Capital Cities/ ABC, Miramax Pictures and The Mighty Ducks hockey franchise.

Prior to his work for Disney, Philip was an investment banker for both Morgan Stanley & Company, Inc. and Salomon Brothers Inc.

The Lycos search engine is located at http://www.lycos.com.

Doctor Says Kids Addicted to Net

A British psychologist says some children are becoming addicted to the Internet, spending up to 14 hours a day online. He believes this might become as damaging as drug or alcohol abuse.

Reporting from London, the Reuter News Service quotes Dr. Mark Griffiths of Nottingham Trent University in the English Midlands as saying, "As the number of people who have access to the Internet grows, the number of people addicted to it will grow."

He says parents shouldn't be put off buying their children a computer, but they should try to make sure it's not used to excess.

Griffiths says children who spend up to 14 hours a day on the Net could sacrifice time with friends and fail to develop mature relationships.

Foreign Chip Share in Japan Up

A U.S. trade group reports foreign chipmakers increased their share of the Japanese semiconductor market by 3.3 percentage points to a record 26.2 percent in the third quarter.

Reporting from San Jose, California, United Press International quotes officials with the Semiconductor Industry Association as saying the foreign share averaged 24 percent for the first three quarters of 1995, compared to an average of 21.9 percent during the first three quarters of 1994 and 19.4 percent for all of 1993.

UPI notes Japan is required to permit foreign producers to achieve at least a 20 percent share in its market.

Company Recalls Memory Program

SoftRAM95, a Syncronys Softcorp program designed to mimic the benefits of having more memory chips, is being recalled in the wake of a federal government inquiry into claims the software doesn't work as promised.

The Associated Press says the software works as advertised for Windows 3.1, but is ineffective with the newer Windows 95 operating system.

"The company said in November it would put stickers on its packages warning customers that SoftRAM95 would work only for Windows 3.1," AP reports. "The company issued the recall because stickers didn't make it onto all the packages."

The wire service says SoftRAM95 has been one of the biggest-selling for PCs in the United States this fall, capitalizing on Windows 95's need for additional memory to run effectively.

Officials with the Culver City, California, firm told the wire service the New York office of the Federal Trade Commission has started an inquiry into SoftRAM and that the company is cooperating. Also, two lawsuits have been filed against the company over the problem.

Meanwhile, Syncronys officials say the firm is developing a version of the program that will work with Windows 95 and plans to ship the revised version to registered users and make a program that repairs the original's trouble available through online services.

Online Super Bowl Site in Works

An Internet site available to football fans for the month leading up to the Super Bowl game is being created by NBC and the National Football League with the help of Microsoft Corp.

A Super Bowl preview show being created by NBC and the NFL will be shaped in part by suggestions made via the Internet site, according to the Associated Press.

Site visitors will be able to suggest topics to be included in the one-hour TV special on behind-the-scene game preparations, which will be aired the night before the Super Bowl. AP says Microsoft will help create and manage the service.

Both NBC and the NFL are selling advertising packages that include slots on the online service. Ann Kirschner, an executive for NFL Enterprises, said the online ads were going for about $100,000, and said at least seven slots were available.

Taligent to Become IBM Subsidiary

Apple Computer Inc. and IBM Corp. have confirmed recent press reports that their Taligent venture will be folded into IBM. About 200 jobs will be lost in the process.

The Taligent Object Technology Development Center will continue the development of Taligent technologies and accelerate their integration into IBM products. IBM will assume responsibility for marketing and distribution of all future Taligent products.

Taligent was formed in 1992 by Apple and IBM to develop a new application system based on object-oriented technology. Hewlett-Packard Co. became the third investor in 1994.

"Taligent's pioneering technology is an important element in our object-oriented software strategy for enterprise-wide distributed computing," says Steve Mills, general manager of IBM's software solutions division. "Today's announcement will allow us to accelerate delivery to our customers. It reinforces our aggressive drive to provide software developers with powerful, cross-platform, object-oriented software that adheres to industry standards and meets enterprise needs."

FBI to Probe IBM in Argentina

A judge in Buenos Aires says an FBI team soon will visit Argentina to determine if IBM's local unit, currently involved in a probe into an alleged bribery scheme, has broken U.S. laws.

Federal judge Adolfo Bagnasco, heading the probe into alleged bribery in a tender for a $249 million project to upgrade computers at the state-owned Banco Nacion, told David Haskel of the Reuter News Service he expects the FBI team later this month or early in February.

Computer Parts Centre

Mail order and upgrades are welcome!

IBC Pentium Value System

Intel Pentium PCI System

* Intel Pentium CPU PCI System
* GIGABYTE Motherboard
* 8 Megabutes 72PIN SIMM RAM
* 1.44MB High Density Floppy Drive
* Western Digital 850MB Hard Drive
* PCI EIDE 2x16550 Built-In
* Diamond 64bit 1MB VGA Card
* 15" NI 1280*1024 SVGA LR Monitor
* Fujitsu Win95 104 Enhanced Keyboard
* 19" Tower Case 200W Power Supply
* Logitech MouseMan 3 Button Mouse
* CPU Heatsink w/Fan /Installed

Pentium - 75	$1899	Pentium - 120	$2169
Pentium - 90	$1999	Pentium - 133	$2369
Pentium - 100	$2069		

IBC Pentium Power System

Intel Pentium PCI System

* Intel Pentium CPU PCI System
* Intel-Endcavor Triton Motherboard
* 8 Megabytes 72PIN SIMM RAM EDO
* 1.44MB High Density Floppy Drive
* Western Digital 850MB Hard Drive
* PCI EIDE 2x16550 Built-In
* Diamond 64Bit 1MB VGA Card
* 15" NI 1280*1024 SVGA LR Monitor
* Fujitsu Win95 104 Enhanced Keyboard
* 19" Tower Case 200W Power Supply
* Logitech MouseMan 3 Button Mouse
* CPU Heatsink w/Fan /Installed
* SoundBlaster 16 (Vibra) Built-In
* Quad Speed 4X CD-ROM Drive

Pentium - 75	$2299	Pentium - 120	$2569
Pentium - 90	$2399	Pentium - 133	$2769
Pentium - 100	$2469		

Memory & CPUs & Motherboards

(Built in EIDE on PCI Motherboards)

Memory	$ Call
Mother Board (No cpu)	
GIGABYTE 486 AM PCI	$ 169
GIGABYTE 586 AM UMC P&P	$ 229
GIGABYTE 586 with 256 Cache TRITON chipset	$ 245
Intel Endeavor Mainboard W/Triton Chipset 256k Cache Pipelined Burst Sound blaster 16 built-in	$ 439

PCI & Local Bus Video Cards

Trident 9440 1MB DRAM PCI	$99
ATI/Diamond 64bit 1MB DRAM	$165
ATI/Ultra Pro 2MB VRAM VL	$249
Diamond Viper 2MB VRAM VL	$249
ATI MACH64 2MB DRAM PCI	$235
ATI Mach64 2MB VRAM PCI	$359
MIroCRYSTAL-20SV 2MB VRAM	$349
Diamond Stealth64 1MB DRAM with MPEG	$189
Diamond Stealth64 2MB DRAM	$235
Diamond Stealth64 2MB VRAM	$369

I/O Controller Cards

VL-VESA EIDE 2S, 1P,1G	$ 25
Adaptec 2940 PCI Wide SCSI	$369

Hard Drives

Western Digital 850MB 10ms	$285
Western Digital 1.0GB 10ms	$315
Western Digital 1.2GB 10ms	$375
Western Digital 1.6GB 10ms	$475
Conner 1.28 GB Hard Drive	$365

Misc. & Accessories

Cables; Ribbons; Toners	
Removable IDE Hard Drive Kit	$ 39
External SCSI HD Box w/PS 3.5	$115
External SCSI HD Box 5.25 Bay	$125
Windows 95 Full Version (OEM)	$135

Fax Modems

SmartLink 14.4	Int.	$ 65
SmartLink 14.4 Voice	Int.	$ 85
SmartLink 28.8 V.34	Int.	$175
Sportscr 28.8 V.34	Int.	$239
Sportstcr 28.8 V.34	Ext.	$289
sportstcr 28.8 DSVD	Int.	$389

Tape Backup

Colorado 350MB Internal	$199
IOMECA Zip Drive External	$289

Multimedia

Panasonic 4X CD-ROM IDE	$160
Panasonic 4X CD-ROM SCSI	$265
Toshiba 4X CD-ROM IDE	$185
Teac 6X CD-ROM Drive IDE	$285
Toshiba 4X CD-ROM SCSI	$279
Toshiba 6.7X CD-ROM SCSI	$499
Diamond 16 Bit Stereo MCD	$ 85
Sound Blaster 16 Vibra	$105
Sound Blaster 16 SCSI-2	$249
Sound Blaster 32 IDE	$225
Sound Blaster 32 AWE P&P	$319
4W Speaker Pair	$ 9
55W Speaker Built in AC adapter	$ 45
80W Speaker Built in AC Adapter	$ 79
115W Speaker Built in AC Adapter	$ 89
Microsoft Encarta 95 4CDS	$ 95

Cases & Power Supplies

13" Mini Tower 200 Watts	$65
15" Mini Tower 200 Watts	$75
19" Mid Tower 200 Watts	$85
24" Full Tower 230 Watts	$120

Lifetime warranty on power supply

Monitors

14" N/I .28 SVGA Monitor	$ 299
ADI 4V NI LR 1280*1024	$ 529
CompuPartner 15" N/I .28 LR	$ 475
CompuPartner 17" N/I .28 LR	$ 845
MAC DX17F 17" .26 NI 12800	$ 969
NEC 17XV 17" N/I .28 1280	$1079
Sony sf 15' .25 NI LR 1280	$ 679
Samsung 17" CLSi .26 1600	$1259

Monitor Repair From $65
Free Estimate

Keyboards & Mice

Fujitsu 4720 Keyboard	$59
Focus 2001 101 Key Tactile	$48
Fujishu 8725 Win95 104 Key	$49
North Gate Omni Plus	$88
Super II/Genious 3b Mouse	$10
Logitech MouseMan (OEM)	$30
Logitech TrackMan Portable	$75

Printers

Brother HL-660 2MB 6PPM	$ 739
Brother HL-1260 2MB 12PPM	$1549
Hewlett-Packard 660c	$ 549
Raven 2405 Hush 24PIN	$ 239
Canon BJC-4000 Bubble Jet	$ 409
Canon BJC-210 Bubble Jet	$ 389

Network Cards

Microdync NE5500 PCI 10bast2	$165
3Com509 Combo EtherLink III	$178
SMC EtherEasr 16bit	$135

Prices are subject to change without notice. C.O.D. cash only.

IBC Computers

3243 Main Street (at 16th)
Vancouver, B.C.
V5V 3M6

Phone: (604) 876-8855
Fax: (604) 876-8779

Store Hours:
Mon-Fr.: 9:30-6:30
Sat.: 11:00-6:00

Microsoft · yes It runs with NetWare · Canon · FUJITSU · ATi · NEC · 2the max · ADI · Quantum · Ω systems · hp HEWLETT PACKARD

3D Triton Station

Intel Pentium Processor with Fan (support up to 166MHz)
Triton chipset PCI/ISA Main Board w/256KB Pipeline Burst Cache
8MB-70ns EDO Performance-Enhanced DRAM exp. to 128MB
1.44MB Floppy Drive
850MB Fast IDE Hard Drive (Mode 3)
PCI Enhanced IDE Cont. w/ 2x16550 Serial,1xBi-Directional Parallel
PCI Diamond 3D Edge Accelerator w/1MB DRAM (exp. to 2MB)
Built-in 16 bit Wavetable Audio with Speakers,2 Sega Saturn Ports
4x Speed CD-ROM
Sceptre 15" Non-Int. Low Rad. SVGA Monitor PnP
Mid-Tower Case with CSA Power Supply
101-keys Enhanced Keyboard,3 Button Mouse
2 Year Parts & Service Warranty

intel inside
pentium PROCESSOR

EDO MEMORY INSTALLED	
75 MHz	$2,110
100MHz	$2,220
120MHz	$2,330
133MHz	Call
166MHz	Call

Triton Station Plus

Intel Pentium Processor with Fan (support up to 166MHz)
Triton chipset PCI/ISA Main Board w/256KB Pipeline Burst Cache
8MB-70ns EDO Performance-Enhanced DRAM exp. to 128MB
1.44MB Floppy Drive
850MB Fast IDE Hard Drive (Mode 3)
PCI Enhanced IDE Cont. w/ 2x16550 Serial,1xBi-Directional Parallel
Support up to 4 IDE Hard Drive, Max. Transfer Rate up to 16MB/Sec
Intergrated 8 x 32-bit buffer for PCI IDE Brust Transfers
PCI ATI Xpression 64-bit Windows Accelerator with 2MB DRAM
Sceptre 15" Non-Int. Low Rad. SVGA Monitor PnP
Mid-Tower Case with CSA Power Supply
101-keys Enhanced Keyboard,3 Button Mouse
2 Year Parts & Service Warranty

Full Motion MPEG Full Screen

EDO MEMORY INSTALLED	
75 MHz	$1,810
100MHz	$1,920
120MHz	$2,030
133MHz	Call
166MHz	Call

Monthly Special !!

SIMM Memory

4MB 70ns 72-Pin SIMM	$139.00
8MB 70ns 72-Pin SIMM	$275.00
16MB 70ns 72-Pin SIMM	$545.00
1MB 70ns 30-Pin SIMM	$ 39.99
4MB 70ns 30-Pin SIMM	$159.00

PANASONIC

PANASONIC 4X Speed Internal IDE CD ROM Drive
Limited Quantity !! $149.00

Zoltrix

14,400bps Internal Voice/Fax/Data Modem w/Speaker Phone
Limited Quantity !! $63.00

CreativeLabs $425

4X Discovery Kit Includes 15 Multimedia Titles
Sound Blaster 16 PnP & 3D Stereo Technology
Full Throttle,Star Wars Dark Forces SE,
Virtual Pool,Grolier Encyclopedia and more..

IDE Hard Drive Special !!

1.6GB $415

ENHANCED IDE HARD DRIVE

850MB	$266
1.08GB	$318
1.2GB	$355

Free Installation

VESA Main Board 256 KB Cache

w/486 DX2-80MHz	w/486 DX4100MHz
$168.00	$223.00

Power Station

BEST BUY

Features:
Intel Pentium CPU with Fan
Pentium PCI/ISA Main Board w/256KB External Cache
8MB-70ns Fast Page DRAM exp. to 128MB
1.44MB Floppy Drive
850MB Fast IDE Hard Drive (Mode 3)
PCI Enhanced IDE Controller (Mode 3 & 4)
PCI Trident 9440 Windows Accelerator with 1MB DRAM(expandable to 2MB)
2x16550 UART Serial, 1 Bi-Directional Parallel
14" Non-Int Low Rad. SVGA Monitor .28mm dp
Mid-Tower Case with 230W CSA Power Supply
104-keys Enhanced Keyboard,3 Button Mouse
2 Year Parts & Service Warranty

PENTIUM	
75MHz	$1,455
100MHz	$1,565
120MHz	$1,675

Power Station Plus

MPEG Playback

Features:
Intel Pentium CPU with Fan
Pentium PCI/ISA Main Board
8MB-70ns Fast Page DRAM exp. to 128MB
1.44MB Floppy Drive
850MB Fast IDE Hard Drive(Mode 3)
PCI Enhanced IDE Controller
PCI Cirrus Logic 5440 Windows Accelerator with 1MB DRAM(MPEG Playback)
2 16550 UART Serial, 1 Parallel & 1 Game Port
14" Non-Int Low Rad SVGA Monitor .28mm dp
Mid-Tower Case with 230W CSA Power Supply
104-keys Enhanced Keyboard, Speakers
Sound Blaster 16 Card,4X Speed CD-ROM
2 Year Parts & Service Warranty

PENTIUM	
75MHz	$1,705
100MHz	$1,815
120MHz	$1,925

Multimedia System

4 X CD ROM

Features:
486 PCI/ISA Main Board P24T upgradable w/256KB External Cache
4MB-70ns Fast Page DRAM exp. to 128MB
1.44MB Floppy Drive
540MB Fast IDE Hard Drive(Enhanced Mode 3)
PCI Enhanced IDE Controller
PCI Trident 9440 Windows Accelerator w/1MB
2 x 16550 Serial, 1 Parallel & 1 Game Port
14" Non-Int Low Rad SVGA Monitor .28mm dp
Mid-Tower Case with 230W CSA Power Supply
104-keys Enhanced Keyboard
Sound Blaster 16 Card,4x Speed CD-ROM
3 Button Mouse & Stereo Speakers
2 Year Parts & Service Warranty

486	INTEL	AMD
DX2-80		$1,290
DX4-100	$1,365	$1,345
DX4-120		$1,370

Impression

NEW !! PCI BUS

Features:
486 PCI/ISA Main Board P24T upgradable w/256KB External Cache
4MB-70ns Fast Page DRAM exp. to 128MB
1.44MB Floppy Drive
540MB Fast IDE Hard Drive(Enhanced Mode 3)
PCI Enhanced IDE Controller
PCI Trident 9440 Windows Accelerator with 1MB DRAM(expandable to 2MB)
2 x 16550 Serial, 1 Parallel & 1 Game Port
14" Non-Int Low Rad. SVGA Monitor .28mm dp
Mini-Tower Case with CSA Power Supply
104-keys Enhanced Keyboard, 3 Button Mouse
2 Year Parts & Service Warranty

486	INTEL	AMD
DX2-80		$1,030
DX4-100	$1,105	$1,085
DX4-120		$1,110

Video Graphics Adaptors

ATI Mach 64 Xpression VLB/PCI w/2MB DRAM	$220.00
ATI Mach 64 WinTurbo VLB/PCI w/2MB VRAM	$355.00
ATI Mach 64 Win Turbo VLB/PCI w/4MB VRAM	$590.00
Diamond Stealth 64 Video PCI 1MB/2MB DRAM	$180/220
Diamond Stealth 64 Video 3200 PCI w/2MB VRAM	$355.00
Diamond Stealth 64 Video 3240XL PCI w/2MB VRAM	$465.00
Diamond Stealth 64 Video 3400XL PCI w/4MB VRAM	$675.00
Diamond 3D Edge 2120XL PCI w/1MB DRAM	$355.00
Diamond 3D Edge 3240XL PCI w/2MB VRAM	$565.00
Cirrus Logic 5429 VLB w/1MB exp. to 2MB	$90.00
Cirrus Logic 5440 PCI w/1MB (MPEG)	$120.00
Cirrus Logic 5436 PCI w/1MB exp. to 2MB	$120.00
Trident 9440 PCI w/1MB exp. to 2MB	$90.00

Monitors

Sceptre 14" N/I,L/R(1024X768,.28mmDP) PnP	$300.00
Sceptre 15" N/I,L/R(1280x1024,.28mmDP) PnP	$465.00
CompuPartner 15" N/I,L/R(1280x1024,.28mmDP)	$460.00
CompuPartner 17" N/I,L/R(1280x1024,.28mmDP)	$825.00
ADI 4V/LR 15" N/I,L/R(1280x1024,.28mmDP)	$540.00
ADI 5EP 17" N/I,L/R(1280x1024,.28mmDP)	$890.00
Mag DX195 15" N/I(1280X1024,.28mmDP)	$499.00
Mag DX17F 17" N/I(1280x1024,.26mmDP)	$935.00
Sony 15SX1 15" N/I,L/R(1280X1024,.25mmDP) PnP	$605.00
Sony 17SF2 17" N/I,L/R(1280X1024,.25mmDP)	$1295.00
Sony 17SE2T 17" N/I,L/R(1600X1280,.25mmDP)	$1599.00

HD/FD Controllers

ISA IDE HD/FD Controller with I/O	$19.00
VLB Enhanced IDE with I/O	$28.00
VLB Enhanced IDE with I/O UART 16550	$36.00
Adaptec 1505 SCSI CD-ROM Controller	$70.00
Adaptec 1542CP SCSI HD/FD Controller PnP	$270.00
Adaptec 1542CP SCSI Controller w/Kit PnP	$340.00
Adaptec 2940 PCI SCSI Controller w/Kit	$350.00
Adaptec 2940W PCI SCSI Controller w/Kit	$395.00
Adaptec 3940 PCI Multi-Channel SCSI Controller	$555.00

Keyboards & Cases

Fujitsu 4720 Enhanced 101 Keys	$59.00
Fujitsu 8720 Enhanced 101 Keys	$30.00
Mitsumi Windows 95 Keyboard	$30.00
Montercy 104-Keys Windows 95 Keyboard	$23.00
Microsoft Natural Keyboard	$99.00
Full Size Tower with 230W CSA Power Supply	$120.00
Mid Size Tower with 230W CSA Power Supply	$80.00
Mini Size Tower with 200W CSA Power Supply	$60.00
Desktop with 200W CSA Power Supply	$65.00

Drives & Tape Backup

1.2MB 5.25" Floppy Drive	$59.00
1.44MB 3.5" Floppy Drive	$39.00
Enhanced 540MB IDE Hard Drive	$228.00
Enhanced 850MB IDE Hard Drive	$266.00
Enhanced 1.08GB IDE Hard Drive	$318.00
Enhanced 1.2GB IDE Hard Drive	$355.00
Enhanced 1.6GB IDE Hard Drive	$415.00
Seagate 1.0GB SCSI-2 Hard Drive	$490.00
Seagate 2.1GB SCSI-2 Hard Drive	$995.00
Seagate 4.26GB SCSI-2 Hard Drive	$1425.00
Seagate 9.0GB SCSI-2 Hard Drive	$3450.00
Colorado T1000 800MB Int./Ext. Backup Drive	$260/315
Colorado DJ-50 Jumbo 1.36GB Backup Drive	$330.00
Conner 420MB Tape Backup Drive	$175.00
Conner 800MB Travan Tape Backup Drive	$220.00
Micro Solution Backpack 800MB Tape Backup Drive	$239.00

Motherboards

Triton Pentium 75/100MHz PCI/ISA w/256KB Cache	$430/540
Triton Pentium 75/100MHz w/256KB Burst Cache	$480/590
Advanced/EV 75MHz PCI/ISA w/256KB Burst Cache	$615.00
Cyrix 5x86-100 PCI w/256KB Cache	$360.00
GigaByte 486DX2-80/486DX4-100 PCI w/256KB Cache	$210/265
486DX2-80/DX4-100 VLB w/256KB Cache	$168/223

MultiMedia

Creative Labs 4X Performance	$499.00
Creative Labs 4X Value Kit	$379.00
Creative Labs 4X Discovery PnP	$425.00
Creative Labs Sound Blaster 16 PnP	$105.00
Creative Labs Sound Blaster AWE32	$325.00
Creative Labs Sound Blaster 32	$199.00
Creative Labs 3D Blaster	$460.00
Diamond 800 8x Multimedia Kit	$465.00
Panasonic 4X Quad Speed IDE CD-ROM Drive	$149.00
Panasonic 4X Speed SCSI CD ROM Drive	$265.00
Panasonic 4X Power Drive2 Rewritable Optical Drive	$749.00
Plextor 6X Six Speed SCSI CD-ROM Drive	$710.00
Teac 6X Speed IDE CD ROM Drive	$265.00
Toshiba 3701B 4X Quad Speed SCSI CD-ROM Drive	$450.00

Memory

16MB-70ns SIMM (72-pin)	$545.00
8MB-70ns SIMM (72-pin)	$275.00
4MB-70ns SIMM (72-pin)	$139.00
1MB-70ns SIMM (30-pin)	$39.99

Modems & Mice

14.4 S/R Int. Fax Modem w/Voice	$63.00
28.8 S/R Int. Fax Modem	$175.00
28.8 S/R Int. Fax Modem w/Voice	$208.00
Cardinal 28.8 Int. Fax Modem w/VoiceView	$245.00
US Robotics Sportster 14.4 Int. Fax Modem	$125.00
US Robotics Sportster 14.4 Ext. Fax Modem	$149.00
US Robotics Sportster 28.8 Int. Fax Modem V.34	$259.00
US Robotics Sportster 28.8 Ext. Fax Modem V.34	$287.00
US Robotics 28.8Vi Int. Fax Modem w/voice	$289.00
Microsoft Mouse v.2 OEM	$35.00
Logitech Mouseman OEM	$33.00
Microsoft Comp. Mouse	$12.00

Printers

Canon BJ-210 Color Inkjet	$375.00
Canon BJC-4000 Color Inkjet	$399.00
Brother HL660 Laser Printer 600dpi	$699.00
Brother HL1260 Laser Printer 600dpi	$1650.00
Epson Stylus II Color Inkjet 720dpi	$615.00
Epson Stylus IIs Color Inkjet 720dpi	$405.00
HP 600C Deskjet Color Printer	$355.00
HP 660C Deskjet Color Printer	$579.00
HP 850C Deskjet Color Printer	$695.00
HP 5L Laserjet, 600 dpi 4 PPM	$689.00
HP 5P Laserjet, 600 dpi 6 PPM	$1255.00
HP 5Si Laserjet,600 dpi,24 PPM	$3999.00
Raven PR-2405 24-pin, 192 cps	$235.00
Raven PR-2420 24-pin, 256 cps	$385.00
Raven PR-2467Q 240 cps	$595.00

YOU CAN FIND US AT

MEIER
Entertainment Group
http://www.meier.com/meier
OR
http://www.starcon.com/mconcept

HEWLETT® PACKARD
Authorized Retailer

MicroConcept
102 - 1245 West Broadway
Vancouver, B.C. V6H 1G7

Call For Updated Lowest Prices!

486DX2-66MHz

NEW! AST COMPUTER

All In One Piece

- 486DX2-66 Processor & Pentium Overdrive Upgradable
- 540MB EIDE Hard Drive
- 8MB RAM
- 1.44MB Floppy Drive
- Local Bus SVGA Card W/1MB
- Quad Speed CD-ROM
- SB16 Sound Card & Speakers
- 14.4K Internal Fax Modem
- 101 Keyboard & PS/2 Mouse
- 2 Serial & 1 Parallel Port
- 14" NI SVGA Monitor .28mm DP
- DOS 6.22,Windows 3.11,Intuit Quicken SE,Works & much More!

$1549

Pentium 75MHz

IBM

Quad Speed CD ROM

- Pentium 75MHz Processor
- 727 EIDE Hard Drive
- 8MB RAM
- 1.44MB Floppy Drive
- Local Bus SVGA Card W/1MB
- SB16 Sound Card & Speakers
- 14.4K Internal Fax Modem w/voice
- 4X Speed CD-ROM
- PS/2 Mouse
- 101 Enhanced Keyboard
- 2 Serial & 1 Parallel Port
- IBM DOS 6.3,Windows 3.11, PFS Windows Works, & much more!

$ 1999

3 Year Warranty

486SX2-50MHz

Packard Bell

Multi-Media

- 486SX2-50 Processor
- 420MB IDE Hard Drive
- 4MB RAM
- 1.44MB Floppy Drive
- Local Bus SVGA Card W/1MB
- 16-bit Stereo Sound & Speakers
- Double Speed CD-ROM
- 14.4K Internal Fax Modem & PS/2 Mouse
- 14" SVGA Monitor .28mm DP
- 101 Enhanced Keyboard
- 2 Serial & 1 Parallel Port
- Includes 27 Software titles like DOS-6.22,Windows 3.11,Microsoft Works, Microsoft Money,Grolier Encyclopedia

$ 1199

Pentium 75MHz

Packard Bell

P100MHz 16MB RAM Twin CD ROM $2459

- Pentium 75MHz Processor
- 850MB EIDE Hard Drive
- 8MB RAM
- 1.44MB Floppy Drive
- PCI Local Bus SVGA Card W/1MB
- 16-bit SRS Stereo Sound & Speaker
- Double Speed CD-ROM
- 14.4K Internal Fax Modem w/voice
- PS/2 Mouse
- 101 Enhanced Keyboard
- 2 ECP Serial & 1 Parallel Port
- Includes 27 Software titles like DOS-6.22,Windows 3.11,Microsoft Works, Microsoft Money,Grolier Encyclopedia

100MHz Upgrade Only $120

$ 1699

* Re-manufactured - 1 Year Warranty

Monitor Sold Separately

Limited Quantity !!

MICROCONCEPT NETWORK PRODUCTS FOR LESS !!

NOVELL SOFTWARE

Novell 3.12 5 user $730.00

NetWare v3.12*

NetWare v3.12 5/10 User	$730/1470
NetWare v3.12 25/50 User	$1990/2550
NetWare v3.12 100/250 User	$3290/5470
NetWare v3.12 Manuals Only	$335

NetWare v.4.1*

NetWare v4.1 5/10 User	$660/1380
NetWare v4.1 25/50 User	$1680/1990
NetWare v4.1 100/250 User	$2320/3950
Netware v4.1 500/1000 User	$13500/21500
NetWare v4.1 Manuals Only	$210

*upgrade full-version

MICROSOFT NT

Windows NT Server v3.51 CD	$885
Windows NT Server v3.51 User License	$45
Windows NT Workstation 3.51 CD	$400
Windows NT Workstation 3.51 upgrade	$125
Microsoft SMS version 1.0	$845
Microsoft SMS ver 1.0 User License	$65
Microsoft SNA Server v2.1 Windows NT	$515

MICROPOLIS SCSI II

M4221 Taugus 2.1GB, 8.9ms	$975
M4221AV Taugus 2.1GB•,8.9ms,AV	$1095
M1936 3.0GB,11ms	$1765
M1936AV 3.0GB,10ms,AV	$1912
M3243 Capricorn 4.29GB,10ms	$1575
M3243AV Capricorn 4.29GB,8.9ms,AV	$1700
M1991 Scorpio 9.1GB,12ms	$3275
M1991AV Scorpio 9.1GB,12ms,AV	$3435

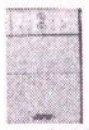
TAPE / CD DRIVE

Conner Tapestor 4000 4 GB IDE Tape Drive $555.00

Colorado Powertape 2GB Int/Ext	$1410/1620
Colorado Powertape 4GB Int/Ext	$1700/2035
Colorado PT10 1.0GB SCSI-2 Internal	$920
Colorado TFC-20 Controller	$88
Conner Tapestor 4000 4GB QIC IDE	$555
Conner Turbo 4.0GB DAT Internal Drive Kit	$1375
Conner Turbo 4.0GB DAT External Drive Kit	$1650
Exabyte 4200C 2-4GB Int/Ext DAT	$1245/1465
Exabyte 8205XL 3.5-7GB Int/Ext 8mm DAT	$1845/2260
Exabyte 8505XL 7-14GB Int/Ext 8mm	$2730/3085
Iomega Ditto Easy 800	$215
Iomega Ditto 3200 Insider 3.2GB Int/Ext	$420/570
Hewlett Parkard Surestore 5000 Int/Ext	$1420/1585
Hewlett Parkard Surestore 6000 Int/Ext	$1610/1785
Hewlett Parkard Surestore CD-R 4020i	$1540
Mountain 2x 7 CD Charger SCSI	$350
Pinnacle Apex 4.6GB Optical Drive	$2175
Pinnacle RCD-1000 Optical Drive	$1985
Pinnacle Sierra 1.3GB Optical Drive	$2800
Sony SDT-5000A 4-16GB int/ext DAT	$1390/1605
Wangtek 3400DX 8/16GB int. DAT •	$1735

POWER PROTECTION

APC BackUPS 280 $149.00



American Power 120 Volt

BackUPS 200/280	$130/145
BackUPS 400/450	$205/250
BackUPS 600/900/1250	$345/490/640
SmartUPS 250/400/600	$325/410/515
SmartUPS 900/1250/2000	$735/888/1675
Matrix 3000VA/5000VA (Modular UPS)	$3930/5835
SmartCELL for Matrix	$703
Line Conditioner LR600/LR1250	$175/250
PowerChute Plus for Novell	$92
PowerChute for Windows	$65
Interface for Lantastic & LAN Manager	$37
Network Surge Arrest 3 Outlet/7 Outlet	$29/66
PowerManager 6 Outlet	$93
PowerNet SNMP agent for Novell	$157

CABLES & JACKS

Twisted Pair

Assembly, 10 BaseT Cable 8/25/50 ft	$10/18/25
Assembly, 10 BaseT Cable 100 ft	$45
Cable, 10BaseT 8c UTP, per ft	$0.35
Cable, 10BaseT 8c UTP, per 1000 ft	$220
Connector RJ45M	$1.00

Coaxial

Assembly, RG58/AU Thin Coax 25/50 ft	$15/22
Assembly, RG58/AU Thin Coax 100 ft	$35
Cable, RG58/AU Bulk per ft	$0.25
Cable, RG58/AU Bulk per 1000 ft	$180
Connector, BNC "T"	$2.50
Terminator, BNC, 52 ohm	$2.50
Tool,BNC Crimping	$60
Terminator, BNC, 52 ohm w/ground strap	$10

ETHERNET COAX Adapters

3COM 3C503 Etherlink II BNC ea/5+	$220/200
3COM 3C509B Etherlink III BNC ea/5+	$155/138
3COM 3C509B Etherlink III BNC 20 pk	$2465
3COM 3C509B Combo BNC/RJ45 ea/5+	$168/146
3COM 3C509B Combo BNC/RJ45 20 pk	$2770
3COM 3C509B Combo BNC/RJ45 100 pk	$12155
3COM 3C590 PCI Ethernet III Combo	$220
Accton EtherCombo ISA	$110
CNet CN200E BNC Ethernet ea/5+	$79/75
CNet CN200E+ BNC Ethernet Jumpless	$79
CNet CN650E+ BNC Ethernet	$99
CNet CN10EBT/PCI Ethernet Combo	$227
Eagle EP 2000plus 16 Bit BNC ea/5+	$105/99
GVC NE2000 Compatible Jumpless	$55
Intel EtherExpress Flash BNC ea/5+	$169/155
Intel Ether PRO BNC & RJ45 ea/20+	$146/135
Microdyne NE2000 + BNC	$141
SMC Ethercard 16 BNC ea/6+	$135/125
SMC Ethercard Elite/a Microchannel BNC	$265
SMC Ultra 16 Combo ea/6+	$150/138

Print Servers

Castelle Lan Press 1 RJ45/1 Par	$455
Castelle Lan Press 1 Par + 3 Ser	$745
Castelle Lan Press 2 Par + 2 Ser	$925
Emulex NetQue 2 Port Print Server	$745
HP JetDirect J2552A RJ45/BNC/LocalTalk	$520
HP JetDirect J2555A Token Ring DB-9 & RJ45	$745
Intel Netport II 10Base-T	$519
Intel Netport II Thin/Thick	$535
Milan FastPort 3110/3210	$570/670

PCMCIA Adapters

CNet CN10BC PCMCIA Combo	$395
D-Link DE-650C PCMCIA Combo	$423
Eagle NE200C PCMCIA BNC	$343
Eagle NE200T PCMCIA RJ45	$294
IBM PCMCIA TokenRing 16/4	$565
Microdyne NE4200 PCMCIA 10 Base T	$310
Silicom PCMCIA Ethernet BNC	$240
Silicom PCMCIA Ethernet w.1MB RAM	$409
Silicom PCMCIA Ethernet RJ45	$225
Silicom PCMCIA Ethernet BNC & RJ45	$254
Xircom PCMCIA Ethernet RJ45	$185
Xircom PCMCIA Ethernet BNC & RJ45	$250

10 BASE T HUBS

3COM 3C16170 Linkbuilder 12 Port Hub	$450
3COM 3C16670 Linkbuilder FMS II 12 Port	$799
3COM 3C16671 Linkbuilder FMS II 24 Port mgmt	$1390
3COM 3C16180 TP/8 8 Port Hub	$269
CNet CN88TPC 8 Port Hub	$175
CNet CN80TPC 12 Port Hub	$405
CNet CN8816TPC 16 Port Hub, Small Footprint	$450
CNet CN8900TPC 12 Port Hub	$620
CNet CN8910TPC 12 Port Hub w/SNMP	$1040
Hewlett Packard AdvanceStack 12	$920
Hewlett Packard AdvanceStack 24 J2601B	$1450
Hewlett Packard AdvanceStack 48 J2602B	$2715
Hewlett Packard 12 Port EtherTwist J2630A	$1315
Hewlett Packard 48 Port EtherTwist	$2235
Microdyne EH1200 12 Port Hub	$309
Microdyne EH1200 8 Port Hub	$275
Microdyne 16 Port Hub	$700
Network Express 8/12 Port Hub	$285
Network Express 16 Port Hub	$608
SMC Tigerhub 6 Port Hub	$238
SMC Tigerhub 12 Port Hub	$510
SMC 3608TP 8 Port Hub	$430
Synoptics 2800A	$850
Synoptics 2813-04 16 Port/4 exp port	$2335

10 BASE T Adapters

3COM 3C503-16 TP ea/5+	$235/205
3COM 3C509B TP ea/5+	$145/128
3COM 3C590 TP PCI	$165
CNet CN600E 10 Base T ea/5+	$70/67
CNet CN600E+ 10 Base T Jumpless	$75
CNet CN970EBT 10 Base T PCI	$180
Eagle Anthem NE2000T + ea/5+	$101/95
Eagle Anthem NE200T PCMCIA	$294
HP Ethertwist 16 10 BaseT ea/6+	$118
IBM Ethernet 10 BaseT Adapter ea/6+	$117
IBM PCMCIA Ethernet 10 BaseT	$283
Intel EtherExpress Pro 10 BaseT	$147
Microdyne NE 2000T+ 10 BaseT	$101
Microdyne NE 2000T+ 10 Base T 20 pk	$1835
Microdyne NE3300 EISA Combo	$288
Microdyne NE5500 PCI 10 Base T	$259
SMC Ethercard Elite 16T Ultra ea/6+	$133/112
SMC Elite 10 T/A Microchannel	$265
Xircom Pocket Ethertalk 10 BaseT	$390

100 MBPS SYSTEMS

HP100VG ISA Adapter $280.00

3COM 3C595-TX FastEthernet PCI ea/5+	$220/195
Intel Pro 100 EISA FastEthernet	$350
Intel Pro 100 PCI FastEthernet	$300
Intel Pro 100 Smart FastEthernet	$1030
HP Networks 100VG ISA Adapter	$280
HP Networks 100VG EISA Adpater	$345
HP Networks 100VG 15 Port Hub	$3100
SMC Etherpower 10/100Base-T PCI	$290
SMC TigerHub 100 16-Port	$3185
Thomas Coax 100 Mbps Adapter	$660
Thomas Coax STP 100 Mbps Adapter	$660
Thomas Coax TC3050-CX 8 Port Coax Hub	$1775
Thomas Coax TC3050-30ST 8 Port STP Hub	$2180

Systems Inc.

Tel: (604) 730-8183
Fax: (604) 730-7983

Store Hours:	
Mon-Fri	09:30am - 6:30pm
Sat	10:00am - 5:00pm
Sun	Closed

- * Two Year Parts And Service Warranty (Systems Only)
- * All Systems Are Tested And Burned-In For 48 Hours Before Shipping
- * Government And Corporate Purchase Orders Welcome
- * Fax Orders And Bids Are Accepted
- * All Prices Reflect 2% Cash Discount
- * Leasing Available
- * Prices Subject To Change Without Prior Notice

All product names, trademarks and registered trademarks are properties of their respective owner

Microsoft Names Web Publishing Tool

Microsoft Corp. says its new integrated publishing system for the World Wide Web, code-named "Blackbird," will be marketed as the Microsoft Internet Studio.

The product is designed to allow content providers to create, publish and manage interactive Web pages. It supports the HTML standard, allowing Web browsers on any platform to view Internet Studio sites.

According to Microsoft, the software works with existing content creation tools and is fully extensible via OLE controls and a software development kit. Without any programming or HTML coding, content providers using Internet Studio can create multimedia Web pages incorporating hypertext documents, graphics, real-time sound and animations.

Internet Studio Web site: http://www.microsoft.com/istudio.

Apple in Bind With Microsoft

Apple Computer Inc. apparently is ending the year facing licensing difficulties for Microsoft Corp.'s Windows 95 operating system.

Computergram International writes that Apple finds itself in a bind because Microsoft's "onerous licensing terms ... seem to involve (Apple) signing away its birthright."

The newsletter notes Apple's Windows and MS-DOS licenses expire on Dec. 31, and the company "has been unable to reach any compromise with Microsoft on the clause in the license agreement that would indemnify the latter against any possible infringement of Apple patents."

CI observes that even Microsoft foe IBM has somehow found a way to sign, "but Apple must now buy the software for its Windows compatibility boards from third parties and get less favorable terms."

Byte BYTE & SOUND

Computer - Multimedia - Karaoke - Cellular

TOSHIBA Color T2130

Satellite T2130 series of high-performance notebooks

Toshiba's Satellite T2130 series or note books gives mobile users the power and speed of an SL Enhanced Intel 486 DX4 processor. The 8-MB standard memory is expandable to 32 MBusing Toshiba's user-installable memory module. Users can also expand the Satellite T2130 series to meet their particular needs by using industry-standard PC Cards, such as fax modem communication cards.

486DX4 8MB RAM
540MB Hard Drive

$2750

NEC

2000D Color Notebook

486DX4-75
4MB Ram
340MB Hard Drive — ***$2299***

Versa 486/33 Color Notebook — ***$1700***

ACER A-OPEN Multimedia Pentium CHRISTMAS SYSTEM SPECIAL

* Intel Pentium 75 CPU w/256K Cache
* 8MB RAM, 1MB PCI Video Card
* 1.0GB Hard Drive
* 3 1/2" 1.44MB Floppy Drive
* Serial Mouse & 101-Key Keyboard
* Microsoft Windows95, preloaded
* Super Mini Tower Case
* QUAD-Speed CD-ROM Drive
* KOSS HD5 Non-Amplified Speakers
* 28.8 kbps Internal Data/Fax Modem
* 16-bit SoundBlaster-compatible Sound Card
* SoftKey Entertainment 6-CD Pak featuring Fighter Wing, BodyWorks, Golf and more!
* 2-Year Limited Parts and Labour Warranty
* CSA, Energy Star and Novell approved

$2,080.00

A-OPEN Pentium 100MHz Multimedia CHRISTMAS SYSTEM SPECIAL II

* Pentium 100 CPU 2/256K Cache
* 8MB RAM 1MB PCI Video Card
* 1.0GB Hard Drive
* QUAD-Speed CD-ROM Drive
* 28.8 kbps Internal Data/Fax Modem
* Microsoft Windows95, preloaded
* KOSS HD5 Non-Amplified Speakers
* 16-bit Sound Card (SoundBlaster-compatible)
* SoftKey Entertainment CD Pak (6): Fighter Wing, BodyWorks, Maelstrom, Golf, 1995 Time Almanac and AirPower!
* Serial Mouse & 101-Key Keyboard
* 3 1/2" 1.44MB Floppy Drive
* Super Mini Tower Case
* 2-Year Limited Parts & Labour Warranty
* CSA, Energy Star and Novell approved

$2,250.00

Modems

Hayes 14,400bps Fax & Modem Internal	$135
U.S. Robotics 14,400bps Fax & Modem Internal	$110
U.S. Robotics 28,800bps Fax & Modem Int. & Ext.	$249/278
U.S. Robotics 28,800bps Fax & Modem Int.w Voice	$299
Cardinal 14,400bps Fax & Modem w.Voice Int.	$138
Cardinal 28,800bps Fax & Modem w.Voice Int.	$259
Cardinal 28,800bps Fax & Modem Ext.	$220

Multimedia

Sound Blaster 16 Sound Card	$118.00
SONY 77E IDE 4x CD-ROM Internal	$185.00
Panasonic 4x IDE CD-ROM Internal	$185.00
Mitsumi 4x IDE CD-ROM Internal	$189.00
Toshiba SCSI 4x IDE CD-ROM Internal	$399.00
NEC 6x SCSI CD-ROM Internal	$599.00

Video Cards

Trident 9440 PCI video card w/ 1MB exp. to 2MB	$99.00
Trident 8900D Video card w/ 1 MB ISA Bus	$88.00
ET4000 PCI Video Card W/1MB exp. to 2MB	$99.00
Diamond Stealth 64 1MB/2MB PCI	$175/235
Diamond Stealth 64 2MB/4MB VRAM VLB/PCI	$399/599
ATI Mach64 2/4MB VRAM VLB/PCI	$355/595

Monitors

Daytek 14" NI. SVGA Color Monitor .28dot	$310
Daytek 14" NI.LR. SVGA Color Monitor .28dot	$325
Daytek 15" NI.LR. SVGA Color Monitor .28dot	$460
MAG DX-15 15" NI.LR. Color Monitor .28dot	$510
MAG DX-17 17" NI.LR. Color Monitor .26dot	$930
Sony 15FS 15" NI.LR. Color Monitor .25dot	$685
Sony 17SE 17" NI.LR. Color Monitor .25dot	$1530
NEC 15XV 15" NI.LR. Color Monitor .28dot	$670
NEC 15XE 15" NI.LR. Color Monitor .28dot	$810
NEC 17XE 17" NI.LR. Color Monitor .28dot	$1460
NEC 17XV 17" NI.LR. Color Monitor .28dot	$1160
Acer 15" Color Monitor .28dot	$438
Acer 15" Digital Color Monitor .28dot	$495

Printers

HP 5L Laser Printer 600dpi	$699
HP 5P Laser Printer 600dpi	$1260
HP 4 Plus Laser Printer 600dpi 12ppm	$2060
HP 4M-Plus Laser Printer 600dpi 12ppm	$2710
Canon BJ-30 Portable Bubble Jet	$315
Canon BJC-70 Portable Color Bubble Jet	$479
Canon BJC-4000 Color Bubble Jet	$395
Canon BJC-210 Color Bubble Jet (New)	$399
Canon LBP-430W Laser Printer 300dpi	$569
Canon LBP-460 Laser Printer 600dpi	$489

Drives

Western Digital, 850 MB EIDE Hard Drive	$288
Western Digital, 1.2GB EIDE Hard Drive	$395
Western Digital, 1.6GB EIDE Hard Drive	$545
NEC 730MB SCSI-2 Hard Drive	$260
NEC 1.08GB SCSI-2 Hard Drive	$368
NEC 2.1GB SCSI-2 Hard Drive	$930
Conner Tape Stor 800MB	$280
Conner Tape Stor TMS4000 IDE/SCSI	$595
1.44MB 3.5" Floppy Drive	$49

Prices are subject to change without notice. VISA service charge is 2.8%.

SURREY
Tel: (604) 589-0388
Suite #103, 14888-104th Ave. Surrey, B.C. V3R 1M4

COQUITLAM
Tel: (604) 941-1833
#124 Westwood Mall, Coquitlam, B.C. V3B 1C5

Political Slogan Becomes Virus

From Bucharest comes word that Romania's best-known political slogan — a call for President Ion Iliescu to resign — has been transformed into a local computer virus.

According to the Reuter News Service, "Jos Iliescu" (that is, "Down with Iliescu") flashed across screens whenever users of infected computers used the J-O-S keys together. Apart from the electronic insult the virus apparently is harmless, the wire service adds.

"Iliescu, who has twice won democratic elections, is an unpopular figure among liberals and students who accuse the former communist of hijacking the 1989 revolution which toppled dictator Nicolae Ceausescu," Reuters comments. "Fading 'Jos Iliescu' graffiti remains a common sight in Bucharest."

China Calls for Net Porn Control

In the wake of Germany's crackdown on pornography in cyberspace, Chinese government officials called for improved management of the Internet to prevent people seeing pornographic material on the network.

The Reuter News Service reports from Beijing that a joint statement from the State Council (cabinet) and the office of the Communist Party's Central Committee said there were increasing links between domestic computer systems and the Internet.

Said the statement, "Good use of the Internet is of great importance to increase global information exchanges, promote economic construction and develop science," but because of weak management and lack of control over what enters the Internet, some pornographic and other harmful materials have come onto the system.

"We must take effective measures to deal with this," the statement said.

Meanwhile, the Netherlands, an Internet provider has shut off a subscriber's access after the user allegedly scanned hundreds of pornographic pictures of children onto the Net.

Reuters says the Amsterdam-based Internet service Xs4all said the incident, which occurred around Christmas, marked the first time it had shut down a user for spreading child pornography on the network.

The wire service notes in the Netherlands, pornographic materials involving persons under 16 are illegal. Disseminating them carries a maximum penalty of four years in prison.

Amsterdam police spokesman Klaas Wilting said the law applies to the Internet and that law enforcers have intensified their monitoring of the Internet for violations in recent years as more people go online.

He said the latest violator was not arrested since he was disconnected before authorities could track him down, but an investigation is under way.

Kahn Steps Down as Borland CEO

Borland International Inc. announced that founder Philippe Kahn stepped down as president and CEO, but will remain with the software publisher as chairman. Gary Wetsel, 49, executive vice president of operations and chief financial officer, was named president and appointed to Borland's board of directors.

Bad Pentiums Cost Intel $450 Million

A $450 million charge was taken by Intel Corp. to account for the costs of replacing its flawed Pentium microprocessor.

Computer Finds Shakespeare Poem

A computer program has confirmed that a 383-year-old poem unearthed in a library appears to be the work of William Shakespeare.

Scholar Donald Foster found the 578-line poem — "A Funerall Elegye In Memory of the Late Vertuous Maister William Peeter," about the death of a young actor in 1612 — in the Oxford University library in 1981.

From Chicago, the Associated Press reports Foster ran the poem through a program called SHAXICON, which he wrote to weed out poetry not really written by Shakespeare.

The software compares word usage and style with that of Shakespeare and 50 other Elizabethan writers. He said the new elegy fit Shakespeare's usage in all 17 tests made by the SHAXICON program. No other author came close in more than five areas.

Still, Foster acknowledges that, even if it is accepted as one of Shakespeare's works, the poem will never be counted as one of his masterpieces.

Said the scholar, "It's not a poem that will ever be widely loved, but it will change how we read his other texts. It is, in a way, a retirement poem, talking of theatricality as a fraud. He also talks of `a sadder case of knowing shame,' possibly scandal of a sexual nature."

He said Thomas Thorpe, publisher of Shakespeare's Sonnets, entered the 1612 elegy in London Stationers Register, a copyright depository, along with the initials "W.S." Shakespeare's last plays were written at about the same time; he died in 1616.

The poem reads in part:

"But whether doth the stream of my mischance

"Drive me beyond myself, fast friend, soon lost,

"Long may thy worthiness thy name advance

"Amongst the virtuous and deserving most, who herein hast

"Forever happy proved;

"In life thou livest, in death, thou diedst beloved."

'96 Internet 'Hangover' Foreseen

The International Data Corp. is predicting a shift in corporate leadership online in the new year. It foresees activity on the Internet and World Wide Web lurching from an "intoxication" to a "hangover" stage in 1996.

The Framingham, Massachusetts, technology consultant also predicts many corporations that invested in online services now will suffer "discouraging" losses in 1996 and decide to pull out of the Internet.

Nonetheless, IDC gave online services a bullish 10-year outlook.

Writing for United Press International, Andrea McDaniels reports, "IDC said two of the leading online service providers — CompuServe, America Online, Microsoft Network and Prodigy — are expected to founder in 1996, leaving only two network giants providing access to the Web."

IDC Vice President Frank Gens told the wire service, "The seeds will be sown for the creation of new leadership and the downfall of some current giants." He did not predict specifically which would fall.

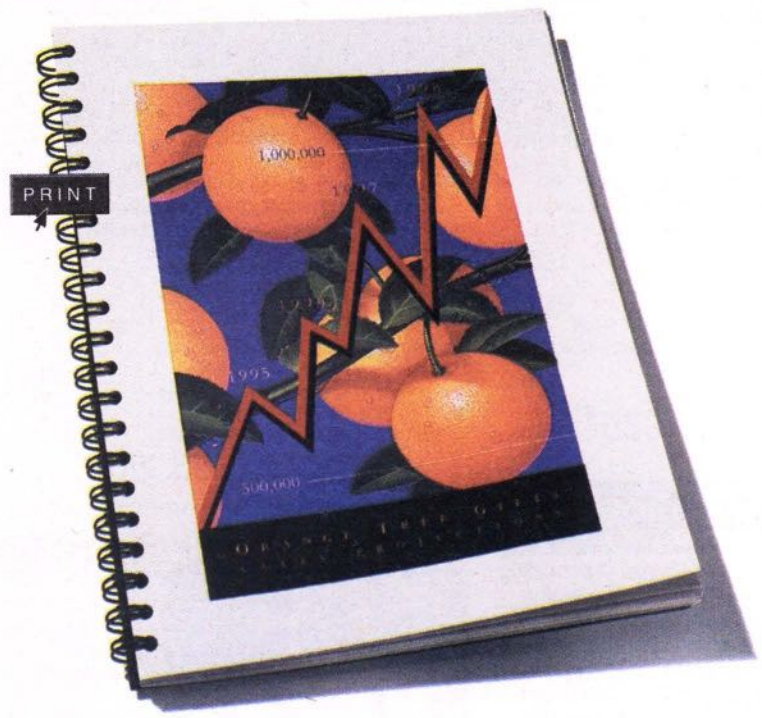
Citing network "traffic jams" encountered by Net wanderers, Gens added, "If they sign on during rush hour on the information superhighway, they could wait five to 10 minutes for one screen to appear. Most will be underwhelmed by the content on the Web once they get there and cancel their online subscriptions."

Other IDC predictions reported by UPI:

- Networks will develop new technologies to cope with the exponential growth of subscribers, whose numbers were expected to soar in the next five years from 8 million to 10 million to more than 200 million, reaching 1 billion by 2010.
- Providers will streamline services through data compression, adding high-speed telephone lines and hooking up larger computers.

If
you could print
what you can
imag-
ine can
you
imagine
what you could print?

EPSON COLOUR INK JET PRINTERS. *Imagine being able to coax that rainbow-chasing child called your imagination out of your brain and onto a document in living, breathing, 720 x 720 dpi, Photo Quality ink jet colour. Imagine the kind of colour that will make people stop what they're doing and look at what you just did. Imagine EPSON Stylus Colour. Now stop imagining and call 1-800-BUY-EPSON or visit our web site at http://www.epson.com. And give your imagination something to play with.*



The ingredients of a really cool document: any one of the Epson Stylus printers, 720 x 720 dpi mode of Photo Quality colour, a dash of imagination, and one teaspoon of awe. (Cleanup is a breeze.)

YOU'VE GOT TO SEE IT IN EPSON COLOUR.™

Street price may vary. Mac compatible.Some models require Epson coated paper for 720 dpi color printing. EPSON and EPSON Stylus are registered trademarks of Seiko Epson Corp. ©1995 Epson Canada Ltd.

Welcome to Computers96

MPEG full motion video
More and more multimedia applications incorporate full motion video. To make the grade in 96, systems need MPEG capability and a PCI video card with at least 1 meg of VRAM. IPC CD/FX and MX•1 systems include both.

Quad Speed CD ROM
Once an expensive option, a Quad speed CD ROM drive is now essential. Most software is accessible easiest by CD. Every CD/FX and MX•1 multimedia system has quad speed CD.

14.4 Voice.Fax.Data modem
Don't even think about buying a PC without a modem card. The internet is rapidly making PCs the communication tool of choice. IPC multimedia systems even include a speaker phone to make them easy to use.

8 megs of RAM
This was once a lot of memory. In 1996 it is the bare minimum. Every IPC CD/FX and MX•1 system ships with at least 8 megs and can be upgraded to 128 megs if required!

Amplified Speakers
Once upon a time computers just went "beep". Now they blast out high quality stereo sound that requires a 16-bit sound card and decent speakers. Just like the ones included with CD/FX and MX•1 systems.

PCI local bus
VESA, EISA, and MCA were all contenders. In 1996 the PCI local bus is the clear winner of the bus wars. (Even Apple uses one.) IPC was one of the first brands in Canada to standardize on PCI.

TOLL FREE 1•800 TECH SUPPORT

Toll Free Tech Support
Even though PCs are vastly simpler to use, they still have their quirks. Access to the manufacturers' technical department is a real bonus. You can call us toll-free!

intel inside pentium PROCESSOR

Intel's Pentium processor
Although other chip makers produce quality processors, only Intel keeps setting the standards. Make sure the "brains" of your PC are secure with a Pentium® processor. CD/FX and MX•1 systems are only available with Intel Pentium processors.

Windows95
Sure there was a lot of hype last year, but Microsoft's latest operating software will be the top choice in 96 and beyond. IPC systems are specifically designed to take advantage of Windows95.

THREE YEAR WARRANTY IPC ONE YEAR ON-SITE

Quality Software
PCs don't do much without software. The most cost effective time to buy software is when it's bundled with a system. The IPC CD/FX 575 includes seven popular Microsoft titles and the IPC MX•575 includes

The Price
Unless you have some pretty intense requirements, paying more than $2000 for a PC usually means you're spending a lot just for a name. IPC CD/FX and MX•1 systems start at an incredible $1699.

See The IPC OpenNote in person at:

Abbotsford	Pacific Office N Things	604.864.0865
Burnaby	Dexton Enterprises	604.433.9866
Burns Lake	New Generation Computer	604.692.3834
Campbell River	Odyssey Computer Services	604.287.3311
Coquitlam	Moody Computers	604.941.9105
Delta / Surrey	Strider Computers	604.543.4200
Kamloops	Specialty Electronics	604.851.9949
Nelson	Nicolson Computer Supply	604.354.4666
North Vancouver	Imaginative Computer Systems	604.984.7400
Penticton	Ashnola Computer Services	604.492.7672
Port Alberni	Alltech Computer Systems	604.723.1127
Port Hardy	Joyful Sound	604.949.7771
Qualicum Beach	Q.B. Microline	604.752.5147
Saltspring Island	HNW Design Computers	604.537.1101
Sidney	Sidney Electronics	604.656.5771
Williams Lake	Information Mgt. Service	604.392.4675
Vancouver	Polson's Office Products	604.879.0631

IPC PERSONAL COMPUTERS

MX•575

Everything you see (except the monitor) here plus:

- *Intel 75MHz Pentium processor*
- *530MB hard drive*
- *On-board PCI IDE controller with high speed serial & parallel ports*
- *101 keyboard*
- *Windows 95 pre-loaded (manuals included)*
- *The seven titles above plus Grammatik*
- *Mouse & mouse pad*
- *3 year parts & labour warranty*
- *First year on-site service**

$1,699

*Only $80 per month**

CD/FX 575

Everything you see (except the monitor) here plus:

- *Intel 75MHz Pentium processor*
- *530MB hard drive*
- *On-board PCI IDE controller with high speed serial & parallel ports*
- *101 keyboard*
- *Windows 95 pre-loaded (manuals included)*
- *The seven Microsoft titles above*
- *Mouse & mouse pad*
- *3 year parts & labour warranty*
- *First year on-site service**

$1,699

*Only $80 per month**

Building quality PCs in Canada for over 10 years!

IPC Personal Computers are built in Canada by: **3D Microcomputers**, 150 Bullock Drive, Markham, Ontario L3P 1W3 Fax: 905.472.6633

The Intel Inside Logo and Pentium are registered trademarks of Intel Corporation. The IPC logo is a trademark of 3D Microcomputers. Windows and the Windows 95 logo are trademarks of Microsoft Corp.

* On-site service is not available in all areas of Canada. System not necessarily as shown. Regional price variances may apply. Prices and configuration subject to change without notice. *O.A.C. based on 36 month term, first and last payments in advance with a 5% buyback option

• Some companies, retailers and publishers will bail out during the "hangover" period, "crippling their business's ability to compete in the virtual economy," says UPI, adding, "This will clear the way for leaders in the electronic marketplace to hike their investment in services."

• Slow development of a wide consumer base will lead 20 percent of the some 170 Fortune 500 companies with commercial Web sites to close or stop maintaining them, resulting in "ghost sites."

• Microsoft Corp. will have to put out its new online products, including its NBC-affiliated news service, under a different brand name tailored to Internet users if it wants to stay ahead. (Said Gens, "There's a limit to the power of the Microsoft brand.") He also thinks the growth of the Web will buck Microsoft from its top spot in the next 10 years. ("It's impossible for Microsoft to be as dominant as it has been in the past 10 years," he said.)

• Net access cost will drop in 1996 from $25 to $70 a month to as little as $10 a month and Internet appliances will be given away free.

• Some "corporate visionaries" will seize the key home consumer market by developing a cheaper multimedia PC that breaks below the magical $1,000 mark. Multimedia computers, which now cost about $1,500, will be pitched for $800 by 1997.

Said Gens, "The ones who figure out how to penetrate the home market will be the leaders five years from now."

Intel Settles Patent Dispute

Intel Corp. and United Microelectronics Corp. of Taiwan have settled their legal dispute regarding UMC's alleged infringement of Intel's microprocessor patents.

Under the terms of the agreement, UMC will halt the production and sale of its version of the '486 microprocessor, will pay Intel an undisclosed sum, and will withdraw all challenges to the validity of Intel patents that the company had filed in Germany, France, the United Kingdom, Taiwan, Hong Kong, and Singapore.

Intel says the deal won't give UMC any rights to technology covered by Intel patents.

AE ELECTRONICS CORP.

TEL. 279-8867 FAX 279-5510 BBS 279-8510

138-2981 Simpson road
Richmond, BC, V6X 2R2
9AM-6PM Mon-Fri, 10AM-6PM Sat

Tired of Looking at that Same old monitor...

We have a selection of Daytek, ADI, & Sony Monitors on display.

From Daytek: their 14", 15", 17" & 21" models
From ADI: their brand new 4V 15" SVGA Monitor
From Sony: the Sony 15sf 15" SVGA Monitor & Speaker System

February Special -- Daytek 1730 17" SVGA, .28mm $849

Authorized Dealer for

HEWLETT PACKARD

COMPUTER ASSOCIATES™ Software superior by design.

AST® Research Inc.

Computer Crashed
No Backup??
Let AE Backup for you...
Dos & Windows machines $30+tape

+ USR Sportster VI 28.8 Internal Voice/Fax/Modems are here!!!
$290

Network Software & Kits

Microsoft Windows '95 Upgrade/Full Version	$125/255
Microsoft Windows NT v3.51 Workstation	395
Microsoft Windows NT v3.51 Server	895
Netware v4.1 (5/10/25/50/100)	call
Ethernet Hardware Kit (2cards, 2 terminators, 25' coax)	$175
Lantastic AI v6.0 Starter Kit (complete setup for 2 node)	285
Lantastic AI v6.0 Add- On Kit (complete setup for 1 node)	155
GVC NE2000 16-bit Ethernet Adapter (BNC/10BT)	$ 65
Intel EtherExpress Pro/10 Ethernet card (10BT)	135
3Com 3C509 Etherlink IIIb Ethernet Card (10BT/10B2)	175
GVC Unmanaged 8-port Hub	255
3Com Linkbuilder TP/8 Unmanaged 8-port Hub	295
3Com Linkbuilder TP/12 Unmanaged 12-port Hub	470
*call for custom length cable both coax (RG58) & twisted pair (RJ-45)	

Accpac

	2000	Plus
Windowing system	$285	$145
General Ledger	795	615
Accounts Receivable	1045	615
Accounts Payable	1045	615
Lanpak users 5/10/20	1450/2425/3275	4 user 375
Order Entry		615
Inventory Control		615
Job Costing		615

Diamond Multimedia

Diamond Edge 3D 2200XL Multimedia Accelerator Photo Realistic 3D Graphics Wavetable Audio 16-bit Sound Card comes with 2 CD games:Virtua Fighter, Nascar Racing	$440.00
Diamond TeleCommander 3500XL Communicator 28.8 Fax/Modem Professional Voice-mail System Full-Duplex Speakerphone CD Quality Multimedia Sound	$395.00

Come See Our Instore Working Display Models
Try to Beat the Computer in Virtua Fighter, or
See the powerful functions of the TeleCommander

Price may change without notice. All prices FOB Richmond. Insurance extra. Advertised prices are cash, add 2% for credit card orders.

Motherboard & RAM

Asus SP3 486DX4-100Mhz PCI/VLB MB, 256k, IDEIO	$335
Asus SP4 Pentium-75Mhz PCI MB, 256k cache, IDEIO	525
Asus TP4XE Pentium-75Mhz PCI MB, 256k cache, IDEIO	545
Asus TP4XE Pentium-90Mhz PCI MB, 256k cache, IDEIO	670
Asus TP4XE Pentium-100Mhz PCI MB, 256k, IDEIO	745
Asus TP4XE Pentium-120Mhz PCI MB, 256k, IDEIO	840
Asus TP4XE Pentium-133Mhz PCI MB, 256k, IDEIO	1075
Asus TP4XE Pentium-150Mhz PCI MB, 256k, IDEIO	1225
Asus TP4XE Pentium-166Mhz PCI MB, 256k, IDEIO	1555
*256k Pipelined Burst Cache add $40	
Intel 486DX4-100MHz CPU 3V	$130
486 CPU Heatsink / Pentium Heatsink	12/20
1MB/4MB SIMM-70ns (30pin)	49 /169
4MB/8MB/16MB SIMM-60ns (72pin) w/o Parity	159/ 305/ 590
4MB/8MB/16MB SIMM (72pin) EDO Memory	175/ 330/ 695
*Please call on all Ram prices	

Hard Drive, Controller

Western Digital 635MB EIDE HD, 10ms, 64k cache	$255
Western Digital 850MB EIDE HD, 10ms, 64k cache	285
Western Digital 1.09GB EIDE HD, 10ms, 64k (mode 4)	325
Western Digital 1.2GB EIDE HD, 10ms, 64k cache	390
Western Digital 1.6GB EIDE HD, 10ms, 64k (mode 4)	470
HP SureStore 1.2GB SCSI-2 HD, 10ms	439
HP SureStore 2.2GB SCSI-2 HD, 10ms	1030
*call for pricing on other drives	
IDE 1:1 HD/FD Adapter w/2S, 1P, 1G	$25
Enhanced IDE HD/FD VLB Adapter w/2S, 1P, 1G	35
Promise 2300+ VLB Enhanced IDE Card w/Bios	85
Adaptec AH-1542CF ISA SCSI-2 Controller Kit	$375
Adaptec AH-2842 VLB SCSI-2 Controller Kit	365
Adaptec AH-2940 PCI SCSI-2 Controller Kit	375

Tape, Case, Power

Colorado DJ-35 Tape Backup Drive (350MB Max.)	$185
Colorado Travan T1000 Tape Backup Drive (800MB Max.)	265
Colorado DJ-50 Tape Backup Drive (1.4GB Max.)	330
Colorado Travan T1000E Parallel Backup (800MB Max.)	315
HP SureStore 2GB Internal 4MM DAT Drive	995
HP SureStore 2/4GB Internal 4MM DAT Drive	1155
HP SureStore 4/8GB Internal 4MM DAT Drive	1350
3M DC2120 tape cartridge 120MB capacity	$ 20
3M DC2120XL Tapes, (350MB Max.)	25
3M MC3000XL Tapes, (1.4GB Max.)	45
3M DG90M 4MM DAT Tapes	20
Mini-size 13" tower or Desktop w/200W Jaba PS	$95
Mid-size 19" tower case w/200W Jaba PS	115
Full-size 25" tower case w/250W Jaba PS	165
Full-size 27" tower case w/300W PS 2 fans, wheels	245

Printer & Accessories

Canon BJ-30 Portable Mono Inkjet Printer	$325
HP DeskJet 600c Colour Inkjet Printer	379
HP DeskJet 660c Colour Inkjet Printer, 600dpi, 4ppm(blk)	575
HP Laserjet 5L 1MB 4ppm, 600dpi	699
HP Laserjet 5P 2MB/5MP PS, 3MB, 6ppm, 600dpi	1275/1495
HP laserjet 4+ 2MB/4M+ PS, 6MB, 12ppm, 600dpi	2125/2875
JetRam card with 1MB for IIP/III/IIID/IIIP	$115
HP LaserJet 4/4+/4M+ toner cartridge	155
Raven RP-2405 Printer, 24pin, 192cps	$235
Raven RP-2407 Printer, 24pin, 192cps, Colour Upgradable	295
Raven RP-2420 Printer, 24pin, 256cps, Colour Upgradable	390
Raven RP-2467 Wide CarriagePrinter, 24pin, 240cps	595
Raven Color kit for RP-9105/2406/2420 printer	75
Serial kit for Raven printer RP2406/2420	65
Printer Auto/Rotary Switchbox 2:1/4:1	30/50

Monitor, Video Card

Daytek 14" SVGA Monitor, .28mm dp NI	$320
Daytek 15" SVGA Monitor, .28mm dp, NI, EStar	470
Daytek 17" SVGA Monitor, .28mm dp, NI, Estar	849
Daytek 21" SVGA Monitor, .28mm dp, NI, EStar	1855
ADI 4V 15" SVGA Monitor, .28mm dp, NI, EStar	535
ADI 5Ep/LR 17" SVGA Monitor, .28mm dp, NI, EStar	925
Sony 15sf 15" SVGA Monitor, .25mm dp, NI, EStar	725
Sony 17sf 17" SVGA Monitor, .25mm dp, NI, EStar	1325
Sony 17se 17" SVGA Monitor, .25mm dp, NI, EStar	1650
Cirrus Logic 5434 PCI Accelerator w/1MB	$125
ATI Mach32 Accelerator w/1MB (ISA/ VLB/PCI)	145
ATI WinBoost Accelerator w/2MB Dram (VLB/PCI)	235
ATI WinTurbo Acclerator w/2MB/4MB Vram (VLB/ PCI)	365/625
Diamond Stealth 64 Video w/2MB Dram (PCI)	265
Diamond Stealth 64 Video 3200 w/2MB Vram (PCI)	360
Diamond Stealth 64 Video 3400XL w/4MB Vram (PCI)	695
Diamond Digital Edge 3D Accelerator w/2MB (PCI)	440

Modem, Mice, Scanner

USR Sportster 14.4 v.32bis Fax/Modem (Int/Ext)	$139/159
USR Sportster 28.8 v.34 Fax/Modem (Int/Ext)	259/290
USR Sportster VI 28.8 v.34 Voice/Fax/Modem(Int/Ext)	290/320
USR Sportster 28.8 v.34 PCMCIA Fax/Modem	399
USR Courier 28.8 v.Everything External Fax/Modem	625
MS Compatible 3-button Serial Mouse	20
Logitech Mouseman (Serial/Bus)	75/ 95
Logitech Trackman Marble	125
Microsoft Mouse v2.0 (Serial/Bus)	85/ 115
Logitech Scanman 256 w/Omnipage OCR	155
Logitech Scanman Easytouch	245
Logitech Scanman Colour w/Omnipage OCR	295
HP ScanJet 4s Personal Grey-Scale Scanner	550
HP ScanJet 4c Full Page Colour Scanner	1395
Bar code laser scanner gun, auto trigger	550
Magnetic card reader (serial or keyboard interface)	195
Magnetic card read/writer	1850
***USR Sportster VI Internal modems now available	

CD-ROM & Others

Panasonic DoubleSpin CD-Rom w/interface	$ 99
Toshiba 5302b QuadSpin IDE CD-Rom Drive	185
Toshiba XM-3701 6.7X SCSI-2 CD-Rom Drive	470
SoundBlaster 16 Vibra Sound Card (OEM)	115
Multimedia Stereo Speakers, 25 Watts	50
Multimedia Stereo Speakers, 45 Watts	70
Sony CSS-B100 Speaker Set	135
Teac 1.20MB 5.25" Floppy Drive	$ 70
Teac 1.44MB 3.5"Floppy Drive / with frame	60/65
Fujitsu KB-8725 Keyboard, 104 Win '95	38
Fujitsu KB-4720 Keyboard, 101 Key (Heavy Duty)	59
MS "Natural" Keyboard, 104 Key Ergonomic	125
Focus 2001/2 Keyboard, 101 Key Enhanced	55
APC Personal SurgeArrest Strip w/Tel	45
APC Professional SurgeArrest Strip w/Tel	65
APC Back-UPS 280/400/450/600VA	145/215/250/350
APC Back-UPS Pro 280/420/650VA Win'95 Ready	199/329/419

Computer Systems

486DX4-100Mhz PCI/VLB Computer System	$1399
Pentium-75MHz PCI/ISA Computer System	1609
Pentium-90MHz PCI/ISA Computer System	1729
Pentium-100Mhz PCI/ISA Computer System	1809
Pentium-120Mhz PCI/ISA Computer System	1899
Pentium-133Mhz PCI/ISA Computer System	2129
Add Multimedia:Toshiba 4X CD-Rom, SB16, 25W Speakers	329

Systems come with the following:
Intel CPU, Asus motherboard, 256k cache;
8MB of Ram,1.08GB EIDE HD; 1.44MB Floppy;
CL 5434 SVGA PCI Card w/1MB;
Mini Size 13" Tower Case w/200W PS;
Fujitsu KB-8725 Keyboard, MS Serial Mouse, MS Windows '95
24 hr burn in, 2 years parts and labour warranty

Just choose a monitor and you're ready to go

Leap To AE Electronics For All Your Computer Needs!!!

SEARCHING FOR "THE BEST ?"
CHECK OUR REFERENCES!

APRIL 1995 BYTE BEST OVERALL PENTIUM NOTEBOOK

Byte Magazine rated Sceptre's Soundx Multimedia Pentium Notebook "Best Overall" . They stated, "Sceptre's Soundx..... excels in overall performance..... it's just the system to meet future demands..... we awarded the best color-quality to Soundx"

PC Digest RATINGS REPORT PC Digest also ranked the Soundx "Number 1 Overall" with a 4 star rating.

Sceptre is, again, back to the future with the latest notebook technology. The **NEW Soundx Series 3200 Pentium Notebook** is slim-line, lightweight, and modularized. An innovative "flat-pin" CPU design reduces heat, and a PCI Interface allows for faster access speeds.

Other soundx features include larger screen display than previous models, excellent battery life, conveniently placed touchpad, a handsome attache, and three year warranty in the USA.

NOW AVAILABLE! —state-of-the-art Soundx Series 4000 Pentium Notebook with speeds up to 133MHz. With all the features of the 3200, the 4000 offers a user-removable quad speed **CD ROM**, and a larger 11.3" DSTN or TFT screen at resolutions up to 1024 x 768.

For Distribution information contact Sceptre at **800-788-2878**

In Canada Call
LAPRO
(604) 244-7798

In USA Call
Tech Data CORPORATION
1-800-237-8931

INGRAM MICRO
1-800-456-8000

SCEPTRE®

EXCELLENCE FOR ALL THE WORLD TO SEE

CERTIFIED ISO 9001 MANUFACTURER

SCEPTRE donates a portion of all profits to the Zoological Society of San Diego in support of C.R.E.S., the Center for Reproduction of Endangered Species.

© 1995 SCEPTRE Technologies, Inc. All Rights Reserved. All product and brand names are trademarks or registered trademarks of their respective companies. The Intel Inside Logo and Pentium are registered trademarks of Intel Corporation.

Faster Pentiums Roll Out

A new Pentium chip that is more than twice as fast as the original Pentium unveiled in 1993 is being formally introduced by Intel Corp.

Reporting from San Francisco, the Reuter News Service says that actually, though, Intel began shipping the new 150MHz and 166MHz versions in large volumes during the fourth quarter of 1995, adding that desktop PCs with the new chips will be available from retailers and direct marketers beginning as soon as today.

At Intel, Pentium marketing manager Frank Spindler said the chips will enable PCs to better manipulate images, multimedia and multitasking, and improve Internet communications capability.

Reuters writer Jeff Benkoe says the 150MHz chip will sell at a wholesale price of $547 and the 166MHz chip at $749. The last Pentium version, released in June, sold for $900 at wholesale.

Benkoe quotes Intel officials as saying the firm expects retailers to sell the computer systems with the new chip at prices ranging from $2,500 to $3,000.

Intel Errs on CPU Benchmarks

Intel Corp. says a bug in the beta compiler it used to generate benchmark results for several of its microprocessors caused it to overstate the chips' performance by about 10 percent.

According to Intel, the beta compiler skewed the SPECint92 performance results for 100MHz and faster Pentium microprocessors 100MHz beginning Sept. 1 and for Pentium Pro microprocessors beginning Nov. 1. SPECint92 is an older integer version of the industry's SPEC benchmark and is being phased out in favor of the more modern SPECint95.

The company says the beta compiler error does not affect performance results for SPECfp92, SPECint95 and SPECfp95, as well as various other Intel-reported benchmarks and Intel's iCOMP index. It adds that the issue is confined to the beta compiler software and affects neither microprocessor function nor the performance of any applications.

Pollack says an updated version of the software — Intel C Reference Compiler 2.2 — will be distributed to beta users and corrected SPECint92 results will be made available within 10 days on Intel's World Wide Web site (http://www.intel.com).

'Windows 96' Pirated on Net

Pirates have posted "Windows 96," Microsoft Corp.'s still-developing upgrade of its Windows 95 operating system, on the Internet, and the FBI has been called in to investigate.

NEC Samples 64-Bit Processor

In Tokyo, officials with NEC Corp. said today they have begun shipping in Japan samples of a high-performance, 64-bit MIPS-based (million instructions per second) microprocessor.

According to the Reuter News Service, the 200-MHz VR5000 microprocessor is based on RISC (reduced instruction set computing) architecture designed by U.S.-based MIPS Technologies Inc.

NEC says it will make 100,000 chips per month starting in March, adding that the new chip boosts performance by about 20 percent over its previous VR4400 chip.

The company told the wire service it sees typical uses of the chip in Pcs, servers, networking devices, laser printers, and copiers, among others.

Researcher: Software Soared in '95

The worldwide packaged software market experienced higher- than-expected growth in 1995, according to year-end research released by International Data Corp.

The market researcher, based in Framingham, Massachusetts, estimates that the overall software market grew by 15.7 percent in 1995, reaching $92 billion. The

I WANT ONE!

NEW! IBM Aptiva Pentium 166MHz, 6xCD-ROM.

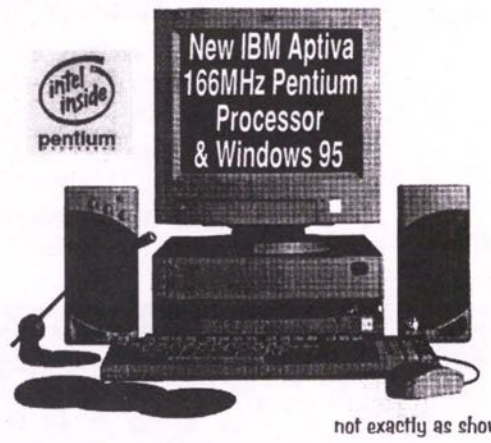
Rapid Resume
When you power on Aptiva, this exclusive IBM feature zooms you back to the exact place you left off.

IBM Solutions for a small plant

Aptiva. Touch New Worlds

Two Processors
A Pentium processor & IBM's powerful media processor share the work normally tackled by single processor for faster performance.

Total Image Video
It's just like going to the movies. With Aptiva, you get sharp full-motion video that's full-screen and true-to-life using MPEG technology.



not exactly as shown

Theatre Sound
You can have dynamic CD quality concert hall sound in your home for the latest videos, music and computer games - all with powerful minitower speakers using built-in amplifiers.

Aptiva A90 : P5/166MHz/16MB RAM/1.6GB HDD/6xCD-ROM
Aptiva M71 : P5/133MHz/16MB RAM/1.6GB HDD
Aptiva M53 : P5/100Mhz/8MB/1.6GB HDD
Aptiva M30 : P5/75Mhz/8MB/1.0GB HDD

starting at $2999.99*
14" SVGA monitor included

Fast 28.8K bps Voice/Data/fax Modem
A 28.8K modem carries you across the Internet at unbelievable speed. Plus 180 days or 180 hours free on the Internet.

Answering machine, phone and fax
Aptiva's Communication Center gives you everything you need to stay in touch. It is a fax, a phone with full duplex speakerphone, call screening, hold with music, and it's also an answer machine.

Online Housecall
A single phone line connects you to skilled IBM technicians who, will "look" inside your Aptiva and repair most problems while talking to you, all with a single line.

3 Year Warranty with Express Maintenacne**
3 year warranty with Express Maintenance (replacement parts are delivered to your door at no charge.) "In-home delivery & Setup" plus a 4 hour "QuickStart" lesson*

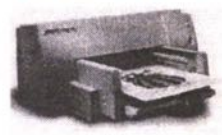
Wake-up on Ring
This exclusive IBM feature can automatically trun your Aptiva on, receive a fax or a phone message and then truns off again - all by itself.

Welcome to the future!

IBM Business Partner
PS/1, Aptiva Parts & Service

Over 40 software titles.
Aptiva comes with a rich array of preloaded award winning software. Total Image Video Bouns Pak with full screen MPEG clarity includes : Silent Steel - interact with actors. The Adventures of Hyperman - learn about the environment with this new cartoon. The Face of Life - revisit 36 years of Life magazine covers. Flight of the Dream Team - fall through the sky with a team of skydivers. Compton's Interactive Encyclopedia. Quicken for Windows SE ... and much, much more!

HP 600 $299.99*
HEWLETT PACKARD Authorized Retailer



HP600C, HP660C, HP850 also available

* when purchased with any Aptiva systems

all Aptiva includes : Windows 95, 4 speed CD-ROM, .28,dp SVGA monitor, and 30W speakers*, (except M30)

All prices and specifications subject to change without notices. We reserve the right to limit quantities. Personal shopping only. No retailers.

COMPU-2000 Technology Inc.
Web Site : http://www.compu2000.com
Business Hours: Mon-Sat 10:00am - 6:00pm
Sun 1:00pm - 5:00pm
2811 Kingsway (next to Purdy's Chocolates), Vancouver, B.C. V5R 5H9
Sales : 604.436.2333 Service : 436.2666 Fax : 436.2619 e-mail : info@compu2000.com

LEARNING OPPORTUNITIES

Computers & More

Invergarry 584-5424
Queen Elizabeth 581-1413
Cloverdale 574-3615
Guildford 589-2221
Newton 594-2000
Scott Town 588-2221
White Rock 531-1515

Surrey Continuing Education offers you Computer Training Opportunities. *(Days and Evenings)*

ACADEMIC - you may participate in Computer training/business Education Options at Invergarry and Queen Elizabeth and gain employment skills while you earn secondary school credit, *OR*

Enroll in any one of a variety of computer courses for your interest, or employment. Beginners to advanced. IBM and Mac Internet included.

THIS TERM-classes for you at Newton also include:
Computer Skilled Office Asst. Certificate;
Novell Administration;
Computer Programming.

To receive a complimentary course catalogue, or to register, call the center nearest you. Winter/Spring Registration begins *January 8, 1996*

SURREY CONTINUING EDUCATION

9260-140 St. Surrey, 583-4040

market is expected to continue its growth in 1996, adds IDC, which is offering an initial forecast of $105 billion by the end of the calendar year.

According to IDC, Computer Associates' purchase of Legent Corp., IBM's acquisition of Lotus Development Corp., and Platinum Software's numerous company/technology acquisitions continued the consolidation trend in the software industry. At the same time, Novell's intention to reverse its purchase of WordPerfect Corp. and Quattro Pro, and Microsoft's attempted purchase of Intuit demonstrated that not all mergers are simple, or profitable, business transactions.

With operating systems becoming commodities, IDC sees a trend for one vendor to dominate as the key provider of a "platform" for a given portion of the system infrastructure, while other vendors are relegated to supporting roles and conformity with the emerging standard. Some examples include Oracle emerging as the platform for database activities, and Microsoft's Windows family of products becoming a "de facto standard" for the desktop.

IDC notes that increased interest in the Internet's World Wide Web has led to a growing recognition that Netscape and comparable browsers represent the next wave of client/server software. New technologies, such as Java, will provide more robust functionality to the Internet and fuel the next revolution of client/server software.

Chip Market Up 40% in 1995

Researchers at Dataquest say the worldwide semiconductor market grew 40 percent last year, reaching $154.7 billion, with all markets posting growth.

Reporting from San Jose, California, United Press International quotes Dataquest officials as saying:

- Intel Corp. was the leader with revenue of $13.83 billion for an 8.9 percent market share.
- Followed by NEC at $11.36 billion.
- Toshiba in third place with $10.19 billion.
- Hitachi number 4 at $9.42 billion.
- And Motorola in fifth with $9.17 billion.

Dataquest says Korean electronics giant Samsung posted the biggest percent rise in sales, gaining 73 percent to $8.34 billion to finish sixth. It was followed by Texas Instruments at $8 billion, Fujitsu at $5.5 billion, Mitsubishi at $5.15 billion and Philips at $4.04 billion.

The research says the Asia/Pacific region, excluding Japan, posted a major gain in market share because of booming demand for DRAM (dynamic random access memory) chips. Revenue rose to $18.7 billion from $9.8 billion, boosting market share to 12.1 percent from 8.9 percent.

In the North American markets, revenue rose to $61.58 billion from $46.11 billion, but market share fell to 39.8 percent from 41.7 percent. Japan's sales increased to $61.13 billion from $44.78 billion and market share declined to 39.5 percent from 40.5 percent.

Finally, the European market rose to $13.33 billion from $9.84 billion and saw market share edge down to 8.6 percent from 8.9 percent.

Kodak Launches Digital Camera

Eastman Kodak Co. has unveiled a sub-$1,000 zoom-lens digital camera that allows users to store images on removable cards.

The Kodak Digital Science DC50 camera features a 3x motor-driven zoom lens; automatic focus and exposure controls; and "good," "better" and "best" resolution options. Users have the option of storing images on removable PCMCIA cards or in the camera's 1MB of internal memory.

Sun Sets Up Separate Java Unit

Sun Microsystems Inc. has spun off a separate unit to handle Java, the evolving programming language it developed for the Internet. To head the new division, Sun has chosen Alan Baratz, formerly president/CEO of Delphi Internet Services Corp.

MyCom Computers

Mon-Sat
10:30am-6:30pm

TEL (604) 739-2827 FAX (604) 739-2820
4244 Dunbar St, Vancouver, B.C.
Dunbar & 26th Ave.

PENTIUM SYSTEM
P90 $1688 P100 $1768 P120 $1938 P133 $2118

- Intel PENTIUM CPU
- Intel TRITON CHIPSET
- 101 Enh. Keyboard
- 8MB RAM
- 850 MB EIDE HD
- 1.44 MB FDD
- PLUG & PLAY BIOS
- PCI Enhanced IDE Controller
- PCI SVGA CARD W/1MB DRAM
- Mid Tower Case
- 256 KB Cache
- 14.4 fax Modem
- 200W Power Supply
- Mouse & Pad
- Monitor Extra
- 2 Years parts & labor warranty

Canon BJC 4000 $398
New BJC 210 $385

FUJITSU brother SCEPTRE

PC-TOP
COMPUTERS & ELECTRONIC CO., LTD.

Computer Systems

P-75PCI .... $1885 P-120PCI $2150
P-90PCI .... $1999 P-133PCI $2375
P-100PCI .. $2050

Mainboard by "Acer" Pentium w/256K pipe-line Burst Cache
Built-in EIDE/IO (2 Fast Serials, 1 Parallel)
"Triton" Chipsets
8MB "EDO" RAM 60nsec 72pin
Panasonic 1.44MB Floppy Drive
1.08GB Fast EIDE, Mode 4 Hard Drive
ATI PCI - 64bit Video Card w/1MB DRAM, MPEG Ready (2MB upgradable)
Acer 562 15" Digital, Flat, SVGA 0.28dp, MPR II LR, Monitor
ISO - 9001 certified
Mid 15" Tower w/230W CSA Approved Case
Windows 95 Keyboard, MS Serial Mouse w/Pad (OEM)
2 Year Parts & Labour Warranty

P-75PCI .... $2425 P-120PCI $2695
P-90PCI .... $2550 P-133PCI $2925
P-100PCI .. $2585

Mainboard by "ASUS" Pentium w/256K Pipe-line Burst Cache
Built-in EIDE/IO (2 Fast Serials, 1 Parallel)
"Triton" Chipsets
16MB "EDO" RAM 60nsec 72pin
Panasonic 1.44MB Floppy Drive
1.2 GB Fast EIDE, Mode 4 Hard Drive
ATI Mach 64 PCI w/2MB DRAM
or Diamond Stealth PCI-64bit w/2MB RAM
Sony Multiscan 15" 0.25dp, CPO-155X1
Mid 15" Tower w/230W CSA Approved Case
Windows 95, Microsoft Certified Keyboard
MS Mouse (OEM) w/pad
2 years parts & labour Warranty

Special upgrade options with the above purchase systems:
- Creative Lab Value CD 4X w/11 titles & speakers $349
- Supra Express 28.8 Internal S/R/Fax Plug & Play Modem $189
- Canon BJC-4000 Color Bubble Jet Printer $359

Intel Pentium - 150
Pentium - 166
Available!!

Notebooks

SmartBook Compaq $2145
Color Notebook
486 DX4-100/4MB/420MB/DSTN 10.3"/1.44MB Floppy

The CD-Notebook - CD5 $3775
P-75/8MB/520MB/CD-ROM/DSTN 10.3"

Pentium Notebook $3150
P-75/8MB/520MB/1.44MB/DSTN 10.3"

Jetbook Symphony $3145
486DX4-100/8MB/520MB
TFT 9.5" Active Color/Built-in Sound Card

486 PCI-Bus System

Intel 486DX4-100 $1175
AMD 486DX4-100 $1150
AMD 486DX4-120 $1180
Mainboard 486DX w/256K Cache
Zip Socket, 3 PCI Bus Slots
Built-In EIDE/IO (2Fast Serial, 1P & 1G)
4MB RAM, 72pin, 70nse
Panasonic 1.44 MB 3.5" Floppy Drive
540 MB Hard Drive EIDE
PCI-Bus SVGA Card w/1MB DRAM
14" (NI) Monitor, 0.28dp SVGA
101 Enhanced Keyboard
Mini Tower Case w/200W CSA Approved
Serial Mouse w/Pad

Sales Repairs and Upgrades Centre
All Work Guaranteed

1090 Kingsway,
Vancouver B.C. V5V 3C6
Phone: (604) 879-3232
Fax: (604) 879-1266
Mon.-Fri. 10:30am - 6:30pm Sat. 11:00am-5:00pm

EC - 9001S (New) ... $405
EC - 9001C $385
VEC - 888(New) $519
CA - 888 Super $575
KY - EV - 555 ..... $395

新到真人發聲英越中電腦辭典(包税)

Authorized dealer of Golden Dictionary (Mandarin/Cantonese/English/Vietnamese)

Printer, Fax and Modem Special

Canon BJC 4000 Color $379
Canon BJC-210 Color Bubble Jet $359
Canon LBP 460 ..... $599
Brother HL-660 600dpi, 6ppm, w/2MB RAM $699
Supra Express 28.8 S/R/Fax Int. $210
Plug & Play, Designed for Windows 95
USR 28.8 Int S/R/Fax V.34 ..... $255
USR 28.8 Ext. S/R/Fax V. 34 ..... $285
USR 28.8 Vi Int. S/R/Fax/Voice $280
Raven Quick Fax 2 ..... $475
w/answer machine and paper cut

Multimedia Packages & CD-ROM Drives

Creative Labs Packages ..... Call
Diamond Packages ..... Call
ACER 4X CD ROM Drive (Sony Engine) $159
Toshiba 4X CD ROM (IDE) $175
Panasonic 4X CD ROM Drive CR-581 ..... $159
SB-16 w/Panasonic Interface ASP $135
Panasonic 2X CD ROM $78
Sound Blaster 16 Bit OEM (Plug & Play) $110
Creative Lab 6X Int. CD ROM w/Sound Blaster AWE32 OEM ... $430
4X4 CD ROM Changer ..... Call!

Monitors

Acer 14" (NI) 0.28dp ISO 9002 Cerfied $330
Acer 15" 566 (NI, LR (MPRII)) ISO 9001 Certified $485
Sceptre 15" Digital, Flat NI, LR $469
MAG DX 17F 0.26dp SVGA $899
SAMSUNG Glsi 17 0.26dp SVGA Plug & Play $1295
Sony 15FX1 0.25dp $599

We also carry other Brand Names please call for prices

Hard Drives SPECIAL

Fujisu 544MB EIDE, Mode 4, 256K 10msec..... $229
Fujisu 1.09GB EIDE, Mode 4, 256K 10msec..... $305
WD 635MB EIDE, 10msec $239
WD 850MB EIDE, 10msec $269
WD 1.08GB EIDE, 10msec $310
WD 1.28GB EIDE, 10msec $365
WD 1.6 GB EIDE, 10msec $455
WD 1.2GB EIDE, 10msec $335

For others Brand Name on SCSI HDs, please call.

NEC Canon AVI brother FUJITSU

Prices are based on COD only and subject to change without notice.

Sun President/Chairman/CEO Scott McNealy told United Press International, "We're privileged to have someone of Alan's stature and background leading this organization. His 15 years' experience in high-technology engineering and executive management is just what we need to grow this critical aspect of our business."

Before assuming the leadership of Delphi, Baratz held senior management positions with IBM in New York, culminating in being named IBM director of strategic development.

CD-ROM Lists Trademarks

Business owners looking to trademark a new product can now take advantage of a CD-ROM that's designed to offer low-cost security against trademark infringement.

The Trademark Checker contains the fully searchable text of all U.S. federal trademarks — registered and pending, live and dead — dating back to 1884.

The CD-ROM can also be used by publishers, advertising agencies, publicists and others who need to check for trademarked words.

The Trademark Checker sells for $199. Additional information is available on MicroPatent's World Wide Web home page: http://www.micropat.com.

Microsoft Lays Off 120 Workers

Microsoft Corp. yesterday laid off 120 workers at its Bothell, Washington, plant, where 3.5-inch diskettes are made.

Reporting from the firm's Redmond, Washington, headquarters, United Press International quotes a Microsoft spokesman as saying it is a sign that 3.5-inch disks are being replaced by CD-ROMs, and notes the company is adding 2,000 people to its total work force this year.

Amquent Unveils Faster Modem

Amquest Corp. says it has developed an internal V.34 modem that delivers compressed data speeds of up to 230.4K bps — twice the maximum compressed speed of conventional 28.8K bps modems.

The company, based in Lancaster, Pennsylvania, notes that its HyperModem is the first modem to offer enhanced throughput using Rockwell International's controller/data pump chipset.

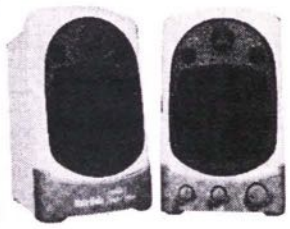
According to Amquest, the $199 HyperModem is capable of data throughputs of up to 230.4K bps when linked to a remote HyperModem and up to 115K bps with ordinary 28.8K bps modems.

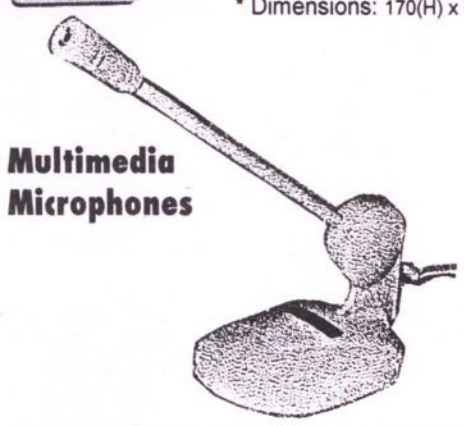
The HyperModem supports V34/V.Fast Class 28.8K bps data transmission, plus slower standards such as 14.4K bps Group 3 send/receive fax. The modem is compatible with Windows 95, Windows 3.1 and most leading Windows and DOS communications packages.

The HyperModem, which is scheduled to become available later this month, will be bundled with data/fax software from Cheyenne Communications.

Hi-Power Multi-Media Speaker Series

SB328T
* 30W x 2 PMPO
* 3.5" Magnetically Shielded Speaker
* Impedance 4 ohms
* Variable Super Bass Booster for Accurate Super Reproduction
* Master Volume Control for Convenient Level Ajustment
* Power On LED Indicator
* Powered by 110v AC 60Hz
* Dimensions: 170(H) x 105 (W) x 100 (D)

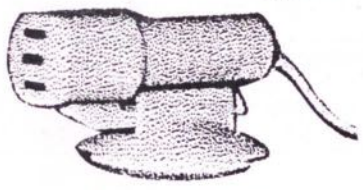


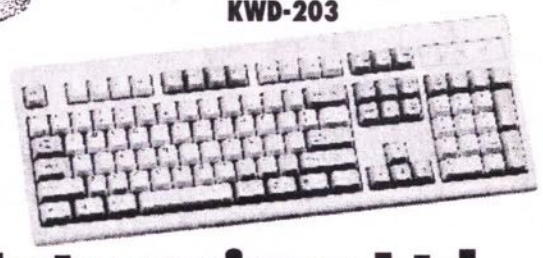


Multimedia Microphones

ST-160
* 160W x 2 PMPO
* 2-way Magnetically Shielded Speaker, 4" Woofer and 2" Tweeter
* Impedance 4 ohms
* Frequency range 20Hz - 20khz +/- 2db
* Power LED
* Master Volume, Bass, Treble Control
* Powered by 110v AC 60Hz
* Dimensions: 150(W) x 240(H) x 170(D)

UNIKEY Windows 95 Keybiard
KWD-203





Mackie Enterprises Ltd.
#180-12868 Clarke Place, Richmond, BC. V6V 2H1
Tel: (604) 270-3386 Fax: (604) 270-2289

Java and HotJava: An Introduction

By Dan DeBellis

Not your average cup of Joe

Java is exciting! It's impressive! It has the potential to significantly change the way we think about and approach networked computing. It's introduction in conjunction with the Internet could very well mark the beginning of a new era in computing.

Yes, computing in general and the Internet in particular are wildly hyped; this industry thrives on it. No, this stuff isn't going to create world peace, end all human suffering, cure baldness or even common dandruff, for that matter. Having said this, Java is not hype. There is a powerful reality behind this new programming language and environment. Maybe you will be as impressed as I was.

The purpose of this article is to obtain a conceptual overview of Java. Those interested in a more in-depth understanding of Java and Java related subjects should visit Sun Microsystems' Java website at http:\\java.sun.com. *The Java Language: A White Paper* and *The HotJava Browser: A White Paper* are both available at this site.

BRAND NEW SAMPLE & USED PARTS DEAD & DAMAGED UPGRADES

主機板 顯示器 機箱 磁碟機 記憶體 電腦用品 軟體 電腦升級 電腦系統

CE OUTLET

NEW SHOP ADDRESS →

CE COMPUTER OUTLET
118-4800, No.3 Road, Richmond, B.C. Canada V6X 3A6
Tel: (604) 278-2633 Fax: (604) 278-2661

ATTN: Students, Electronic hobbyists & Smart buyers.

Build your own system or upgrade your system from 286 to 386 to 486.
We have a huge selection of new items in-stock.

WE TAKE TRADE-INS TOO!!

STORE HOURS
Monday-Friday
11:00am - 7:00pm
Saturday
11:00 am - 6:00pm
Sunday & Holidays
closed

- NEW AND USED COMPUTER PARTS & COMPONENTS.
- WE ALSO PROVIDE SERVICE, MAINTENANCE, REPAIR AND UPGRADE OF COMPUTER SYSTEMS.
- WE PROVIDE SERVICE FOR CHANGING POWER SUPPLY COOLING FAN AND MONITOR REPAIR TOO !
- FREE ESTIMATES BEFORE ANY WORK REQUEST.

PENTIUM PCI/ISA BUS

P - 75 $1770 P - 120 $2060
P - 90 $1880 P - 133 $2320
P - 100 $1960
* Intel Triton Chipset Motherboard w/ 256K PIPE LINE Burst RAM
* 8MB EDO RAM (72PIN)
* 850MB Enhanced IDE HDD
* 1.44MB (3 1/2") Floppy
* PCI 1MB Video Card (exp. 2MB)
* EIDE with 2 X 16550, 1 Para Port
* 15" N/I L/R SVGA .28dp, Monitor
* 13" Mini Tower Case
* 101 Keyboard, Mouse & Pad
Upgrade to 16MB EDO RAM + $320

UPGRADES:
- 4X CD ROM
- Sound Blaster 16
- Speakers (Build in Amplither & power supply) $310

486 PCI BUS

	Intel	AMD
486 DX4-120		$1280
486 DX4-100	$1270	$1260
486 DX2-66	$1240	

* GIGABYTE PCI/ISA Motherboard
* 4MB RAM (72Pin)
* 850MB Enhanced IDE HDD
* 1.44MB (3 1/2") Floppy
* PCI 1MB Video Card (exp. 2MB)
* EIDE with 2 X 16550,1 Para Port
* 14" N/I SVGA .28dp, Monitor
* 13" Mini Tower Case
* 101 Keyboard, Mouse & Pad

With 8MB RAM + $150
With 15" N/I L.R. Monitor + $150
INTERNAL FAX MODEM
14.4 S/R $75 28.8 S/R $195

SPECIAL
16 Bit SOUND LEADER PRO 16E SOUND CARD $59

COMPUTER ACCESSORIES (from $1.00 & up)
Power Supply-
- Cooling fan
- Parts
Cables-
- Power Cord 6'
- Set of IDE/Floppy Cables
- IDE Cable
- Dual Floppy Cable
Cleaning Kits-
- 3.5" or 5.25" Head Cleaning Kit
- Mouse Pad
- MFM Cable (set)
Hardware-
- Screws, Studs, Edge Connectors, Cables, Rails, Etc...
- 30 Pin Simm Socket-(Modify sipp socket.)

TWO YEARS PARTS & LABOUR WARRANTY FOR SYSTEMS

Company Policy
- No cash refund
- No guarantee on availablity of advertised items
- Most items have limited quantity, ie first come first serve basis.
- All sales are final.
- All above prices are for cash & carry only
- No visa or cheque will be accepted
- All brand new items have 1 year warranty
- All used parts * components have 30 days warranty
- All obsolete & damage items have no warranty

樣品和舊電腦 舊零件 損壞的電腦和零件 全新電腦和大量零部件

MONITOR MOTHER BOARD RAM COMPUTER ACCESSORIES FLOPPY DRIVE CASE

A little ancient history

The core technology of Java is an outgrowth of a consumer electronics R&D project started by Sun Microsystems in April, 1991. The goal was to develop advanced software for a variety of networked devices and embedded systems (devices which are attached to and communicating through a network). They needed a small, reliable, portable, distributed, real-time operating environment. Starting with the C++ language, they tried to extend the compiler, a critical part in making the portable and platform-independent environment they wanted. This approach soon proved too problematic. Realizing the problems they faced could best be address by developing an entirely new language, they began working on what they then called Oak, which would later be renamed Java.

Java was first used in developing a prototype PDA (personal digital assistant) like device, this went nowhere due to a nonexistent market, which Apple's Newton later demonstrated. They then applied their Java technology to the Set-top box and video-on-demand market, this also didn't pan out for a number of reasons.

By the spring of 1994 it was obvious the Internet and more specifically the World Wide Web was exploding in popularity with the release of the NSCA's Mosaic, the first web browser and graphical interface to the Web. They realized the potential of Java in combination with the Internet, the mother of all heterogeneous networks. Their new mission was to supercharge web browsers. They began porting Java to the PC, Mac and Sun platforms and developing a web browser in Java. The result was HotJava. The Java Environment and HotJava were formally announced by Sun at Sunworld '95 in May, 1995.

Java

What is Java ? It's a group of technologies: A programming language for developing applications, an architec-

ture for running those applications and a set of tools to build and compile those same applications. Java incorporates a variety of features which include being *portable, architecture neutral, interpreted, dynamic, object-oriented, high-performance, multithreaded, secure* and *robust*. This allows Java to send architecturally neutral code that is *dynamically* loaded and run on any heterogeneous network. If you don't quite understand what all this gibberish means, read on, I'll try to explain.

It is important to keep in mind that Java's features are determined by the nature of the computing environment in which the software must be deployed. As it stands, this means supporting applications on multiple incompatible hardware architectures, multiple incompatible operating systems and one or more incompatible graphical user interfaces, all within a distributed client-server or heterogeneous network.

Java allows you to run the same application or program created with Java on any machine you choose as long as a Java *interpreter* and run-time system have been ported to that same machine. The run-time system and interpreter can exist inside a program, such as a WWW browser like HotJava, or as a stand alone on the machine.

To understand how Java achieves this *portability*, you must first understand how a program written in another language handles this process. First a program is created in lets say C++. The program in it's present form is called source code. For the program to become an executable, that is a program that can be use on your computer, it must be converted into machine or native code. A compiler handles this task. This all sounds simple enough, but the problems began here. Every platform has it's own compilers, and the program will only run on that platform if you use the correct compiler for that specific platform. Compilers also cause a number of other headaches for programmers, which I won't elaborate on here. With the number of different platforms out there you can see that compiling and compatibility issues would quickly add up. This also creates some real complications in a heterogeneous network where any kind of machine could be sitting at the other end of the connection.

SYSTEM - PRO COMPUTERS Ltd.
TEL : 583-9977 FAX : 583-9979

Pentium 75/90/100/120/133
GIGA-BYTE PCI-ISA Board
8M ram w/ 256K Cache
3.5" Floppy Drive
2-The Max PCI Video Card
Daytek 14" SVGA Monitor
14.4K Internal Fax Modem
19" Mid Tower Case
850M IDE HardDrive
Windows 95 Keyboard & Mouse
Internet Software Preinstalled
$ 1834/1987/2038/2088/2401

Computer Service Center
Free System Diagnostic

AST AUTHORIZED RESELLER · HEWLETT PACKARD AUTHORIZED RETAILER · TVM · Raven AUTHORIZED REBELLER · NEC

HardDrives

Conner IDE 850	$ 325
Conner IDE 1.2GM	$ 399
Samsung IDE 1.08G	$ 380
W.D. IDE 630M	$ 290
W.D. IDE 1.28G	$ 430

Printers

Canon BJC-4000 Inkjet	$ 510
Epson Stylus IIS Inkjet	$ 490
Epson Stylus II Inkjet	$ 659
Epson Action 1100	$ 650
HP 600 Inkjet (Mono)	$ 479
HP 660C Inkjet	$ 590
HP 5L Laser Printer	$ 729
HP 5P Laser Printer	$1299
Raven LS3 Laser Printer	$ 639
Raven LS6 Laser Printer	$ 755

Monitors

Proview 14", Green	$ 335
Proview 15", Green	$ 490
Proview 17", Green	$ 835
Daytek 14", Green	$ 349
Daytek 15", Green	$ 480
Daytek 17", Green	$ 885
Nec 15", 0.28, VX15	$ 699

Motherboard w/CPU

Intel 486 DX2-66 PCI	$ 402
Intel 486 DX4-100 PCI	$ 460
AMD 486 DX2-66 PCI	$ 327
AMD 486 DX4-100 PCI	$ 382
Pentium-75 PCI-ISA	$ 595
Pentium-90 PCI-ISA	$ 720
Pentium-100 PCI-ISA	$ 785
Pentium-120 PCI-ISA	$ 1199

Computer Courses

MS-DOS 6.22(Basic)	$ 90
WINDOWS95 (Basic)	$ 90
MS-WORDS95(Basic)	$ 90
HARDWARE ASSEMBLE	$ 90
INTERNET (Basic)	$ 90

國、粵、英語個別教授
報名從速

Prices subject to change without any notice

Multimedia 4x CD Kit
- Mitsumi 4xCD-ROM
- Sound Blaster 16Bit Card
- 5 Microsoft CD Title + Speakers
$430

Multimedia 6x CD Kit
- Creative Lab 6X CD-ROM
- Sound Blaster 32AWE Card
- 5 Microsoft CD Title + Speakers
$599

• Microsoft CD Bundle(Encarta 95, Works, Money, Golf, Entertainment Pack, Dangerous Creatures)

Internet Email Address: syspro@digital-rain.com
COMPUTER BOOKS: UP TO 40% DISCOUNT
SALES . UPGRADE . NETWORKING . TRAINING
Address : Unit A, 10222, 152nd Street, Surrey, B.C. V3R 6N7
(Across from GUILDFORD MALL, WAL-MART)

Business Hours:

Mon-Fri	9:30AM - 6:00PM
Saturday	11:00AM - 5:00PM
Sunday	Closed
Long Week-End	Closed

Basics 'Plus'
a complete InterNet training course
for only $129

the InterNet store

InterNet Courses

$49

4 hours of Inter*Net* training,
45 hours of *ONLINE* access!!
Plus **3 months 'Inter*Net* store' membership!**

✓ **Lots 'a FREE software!**
✓ **Create your own World Wide Webpage!**

InterNet Access
from: **$8.95**

classes begining January 24th
limited to 14 seats!

Bonus **"A Guide to the InterNet" a cyberscout's handbook.**

Other Courses from only $49

Call Now To Register!

875-6306
3448 Cambie St., Vancouver

an Introduction to the InterNet
the Basics on the InterNet
the Intermediate on the InterNet
doing Business on the InterNet
travel & Tourism on the InterNet
Real Estate and the InterNet

We accept
MUTUAL EXCHANGE Canada
The Business Debit Card™
Trade Dollars

Strong COMPUTER INC.

101-1926 West Broadway,
Vancouver, B.C. V6J 1Z2
Tel: (604) **739-0438**
Fax: (604) 739-0436
Business Hours:
Mon.-Fri. 10:00-18:00 Sat. 12:00-17:00

Pentium® PCI Bus

75MHz *$1900*
100MHz *$2050*
120MHz *$2150*
133MHz *$2400*

. Intel®Triton Chipset, Plug and Play Ready
. 256K external cache
. 8MB RAM (72 Pin)
. 1.44MB (3.5") Floppy Disk Drive
. 1.08GB Enhanced IDE Hard Drive
. On Board PCI EIDE HDD Controller (controll up to 4 IDE devices)
. On Board 2 UART 16550 Serial, 1 Parallel (EPP/ECP) Ports

- ATI Mach 64, 64 bit SVGA PCI Card w/2MB RAM
- 15" SVGA Non-Int. Color Monitor (1024x768NI @72MHz) L.R.
- 13" Mini Tower Case w/200W CSA Approved Pwr Supply
- 101 Key Enhanced Keyboard
- Microsoft 2 Button Serial Mouse / Logitech 3 Button PS/2 Mouse

486 PCI® Bus

AMD 486DX4 - 100 *$1450*
AMD DX4 - 120 *$1480*
INTEL 486DX4 - 100 *$1470*

. 256K Cache
. 8MB RAM, (72pin)
. 1.44MB (3.5") Floppy Disk Drive
. 850MB Enhanced IDE Hard Drive
. PCI Enhanced IDE HDD Controller (up to 4 EIDE drives)

- 2 UART 16550 Serial, 1 Parellel Port
- Cirrus Logic 5434, PCI 64bit GUI SVGA Card w/1MB
- 14" SVGA Non-Int. Color Monitor (1Kx768, .28mm) L.R.
- 13" Mini Tower Case w/200W CSA Approved Pwr Supply
- 101 Key Enhanced Keyboard
- 2 Button Serial Mouse

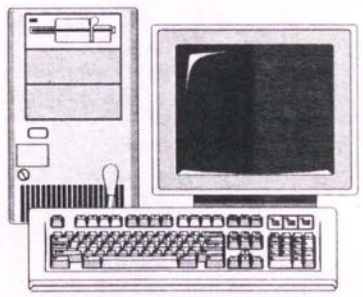
Upgrades:			
256K pl brust cache	$40	850MB => 1.2GB	$110
RAM 8MB => 16MB	$300	SVGA Monitor 14" => 15"	$135
8MB => 8MB EDO RAM	$40	SVGA Monitor 15" => 17"	$400
HDD 850 => 1.08GB	$50	Tower Case 13" => 19"	$25
1.08GB => 1.2GB	$70	14.4K Internal Fax Modem w/ Voice Mail	$90
		28.8K V3.4 internal Fax Modem	$195

***** Multi Media Upgrade Kit Add Only $300 *****
***** (Quad speed CD ROM, Sound Card 16, 2 Speakers) *****

**** Free Estimate on Repairs and Upgrades ****
All Systems: 2 Years Parts and Labour Warranty
Prices subject to changes. Please call for the latest prices

星強 電腦公司

Sales Service & Support



Pentium P75 Multimedia

- Intel Pentium Processor
- 8MB RAM, 14" SVGA Monitor 0.28 dp
- 850MB HD, 1.44MB Floppy Drive
- Enhanced IDE/IO Controller
- Cirrus 5440 MPEG PCI Video Card
- 4X CD-ROM, SoundBlaster 16
- Grolier Encyclopedia, U.S. Atlas
- World Atlas, Chess Master 4000
- Animals, Speakers, Mouse

Special Pricing $1999

Modem Specials

- Modem Blaster 28.8 Fax Modem 4 Games, Internet Access Softwere $219
- Motorola Power Series 28.8. External Flash upgradable $399

PENTIUM Processor P100 Special

- Pipeline Burst Cache
- Intel Pentium Processor
- Triton Chipset, Plug & Play BIOS
- 14" NI LowRad SVGA, .28dp
- 850MB Hard Drive
- Cirrus 5440 MPEG PCI Video Card
- 1.44MB Floppy Drive, 256K Cache
- Deluxe Minitower Case 200 Watt PS
- Fast 16550 Serial Com 1&2
- Keyboard & 2 Button Mouse

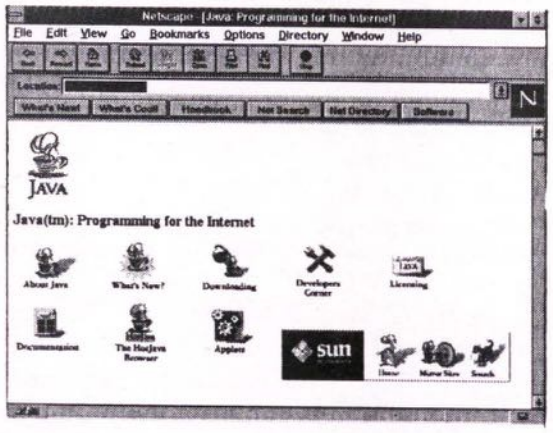
8MB RAM $1869
16MB RAM $2099

2 year parts and labour warranty

INTERTECH
OFFICE AUTOMATION DISTRIBUTION INC.
Member of the Better Business Bureau
Novell Certified NetWare Engineer
4317 Fraser Street, Vancouver, B.C. V5V 4G4 Tel: (604) 872-7337 Fax: (604) 872-2524

HOURS: MON-FRI 10:30am - 6:00pm, SAT. 10:00am - 4:00pm

Java gets around this problem by having their compiler compile the source code to a machine that doesn't exist-the Java Virtual Machine. The program now takes the form of an *architecture neutral* intermediate format called Java bytecodes. In this form the program can be sent over the network to any machine or played directly on any machine, as long as the Java interpreter and run-time system have been ported to that machine. In a sense the Java interpreter is tricking the Java bytecode into thinking it's running on the Java Virtual Machine. By this little trick, Java has reduced the number of applications to be ported to any platform to one; the interpreter. After this, any applications, programs or objects created in Java can run on any platform which has a Java interpreter and the run-time environment. Neat trick eh?...



The portability of the system also depends on the basic data types and arithmetic operators. Java specifies basic data type sizes and arithmetic operator behavior; unlike the C programming language where data takes up different sizes depending on the underlying hardware and OS. This has the effect of making the Java program hardware independent. There are a number of other smaller issues that help complete the portability of the system, but these two issues are at the heart of Java's portability.

Java is truly an *object-oriented* language; another critical feature for a language to thrive in a complex, network-based environment. Object-oriented is one of the most used and abused words in computing, let me define for you a very basic idea of what this paradigm means. In object-oriented computing the most fundamental unit is the object. The idea behind this is that we all live in a world of objects and are use to dealing with them in our everyday lives. Let's use as an example a hammer. A hammer has certain properties and it can be controlled in certain ways. When you use a hammer you don't worry about having to define it and tell the wood and metal atoms what to do, you just pick it up and use it, its an object. In this same sense, you created and define an object in computing and after that you can keep on using it. In Java the object is referred to as the class. The class is a reusable and *dynamically* loadable object which encapsulates functionality in a collection of variables and methods. The class can be used as a template to create other classes with additional functionality. Java also allows the dynamic loading of classes. This means that if additional functionality is needed while using an application new classes can be linked, on-the-fly, that encapsulate the methods needed creating a seamless interaction. As an example, you are cruising the WWW using a Java enabled browser you access a graphic file for which you don't have a helper application. Instead of not being able to retrieve the file, the Java browser can ask the server for a class that can display the file, it would load this class and the file simultaneously and bang...up comes the graphic, seamlessly.

Java is a *robust* environment, a absolute necessity when you are automatically loading and running Java programs. Java does not use pointers it has true memory arrays. This eliminates the chance of overwriting memory (a real no-no) and corrupting data. Java also has automatic memory management in the form of a garbage collector running on a low priority thread in the background, this allows objects without references to be cleared from memory when the program is not busy using processor cycles. Java is also *secure*

which is closely related to robustness. The elimination of pointers makes it impossible to forge access to data structures, a common activity of viruses. Java checks the code for language compliance at both the compiler and interpreter levels, due to the possibility that code could have been altered between compile time and run time. The interpreter also continues its security checks by watching the classes loaded and making sure they only access the file system in the correct manner.

Java is also *high-performance.* In a language which features such robustness, security and portability you would expect some loss of performance, certainly interpreted code can't run as fast as native code, but Java does a good job of getting around these obstacles; reducing the amount of overhead where it can. With built in *multithreading* Java uses a low priority thread to do system maintenance and memory management when the processor is idle. The compiled Java bytecode is also surprisingly fast at interpreting down to machine code, since they are very similar.

V-COM Offers Outstanding Value on Used Computer Products !

Just what exactly happens to all that computer equipment when companies, home offices and home techno wizards upgrade. In some cases the equipment is only about a year old, works great, runs all the software, has a good size hard drive and is plenty fast for the average user for years to come. If you call most dealers and ask if they have any used equipment the answer is usually no. **SO WHERE IS IT ALL?**

" It was like opening Tut's Tomb, a real treasure for the used computer shopper."

The quest for the elusive computer products brought me to V-COM Computers, on the corner of Marine Drive and Kerr in Vancouver. It was like opening Tut's Tomb. A real treasure to the shopper looking for the used market. Systems, monitors, software, modems, scanners, printers, hard drives and the list goes on.

In the computer business for 14 years, V-COM has built quite a booming used business in addition to their new, latest, greatest market.

And let's face it, we feel better if we know that technicians have gone through the equipment, tested it, and can give a good honest evaluation. It's similar to the car business. The biggest used market is at the dealerships.

Now let's talk savings, big savings. For example, last year a new 340MB Hard Disk Drive would sell for about $425.00. Last month at V-COM, used 340MB Hard Drives were selling for $ 80.00. Some of the products are new, that's right, brand new, but the manufacturer has put out a new version and this one is discounted heavily. For some shoppers this is an excellent value.

Products range from an ancient PS1 monitor that has a heavy burn in all the way to new Pentium mainboards. It takes a little digging sometimes, to find the product that may suit your needs yet to save this kind of money it can be well worth it.

It may take a bit of digging and asking questions yet ..well worth it!"

Something Old and Something New? This is another option to the used market. To find the best value-performance a customer has the option to have some new components as well as used parts to complete the ultimate system bargain.

V-COM seems to have a good formula of success in selling used merchandise. The dealership can service and support as well as discuss the pros/cons and limitations of any of the products. There is a dedicated sales staff in the used department that has the expertise to evaluate each product.

New products, demo products, and used products are marked clearly so I had a good idea of exactly what I was looking at.

This is a particularly good time to purchase used equipment due to the architecture shift to Pentium. A good used DX2-66 is a strong enough computer for most home and home office users or as a powerful game system. And a Pentium 75 using the prior version motherboard doesn't exactly make the system a dinosaur.

Used equipment is a good deal all the way round and V-COM has an excellent selection of products.

A Pentium 75 using a prior version mainboard doesn't exactly make it a dinosaur.

Value is Value and V-COM offers an outstanding value on used computer products!

V-Com is located at the corner of Marine Drive and Kerr in Vancouver.
3104 SE Marine Dr. Pn 437-8818

V-COM PRODUCT OF THE MONTH

Nikana CX-100MHz 15" Multi Media
GA 586100Mhz AM MB
16K Internal Cache
256K External Cache
8MB 72 Pin RAM
ATI Mach 64 w 1MB
3.5" Floppy Drive
19" Mid Tower Case
NEC 730MB HDD
Nikana 101 Enhanced KB
16Bit Sound Card
4X CD-ROM Drive
Speakers MLI 691
Microsoft Windows 95 C-D
Microsoft Mouse
Key Features
15" SVGA NI Monitor
Internet Ready High Speed 28.8 V34 Fax Modem
2 Year P & L Warranty

Now available 100 MHz 120 MHz 133 MHz

Nikana

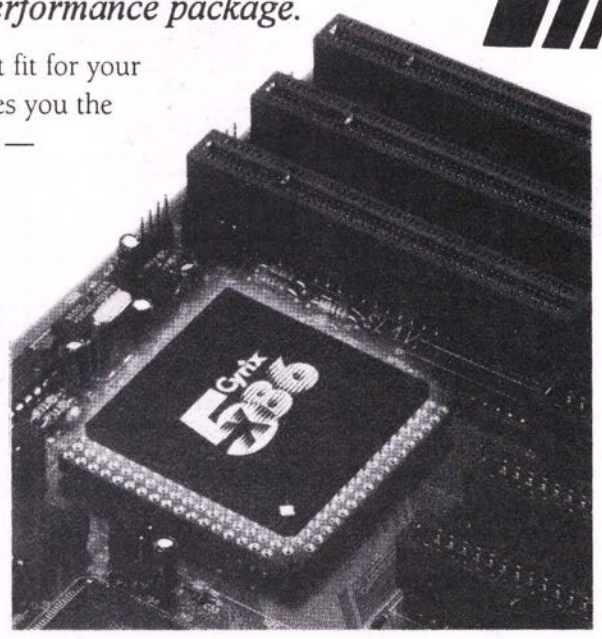
The perfect fit.

The Nikana CX-100MHz from V-Com offers the complete 586 multi-media performance package.

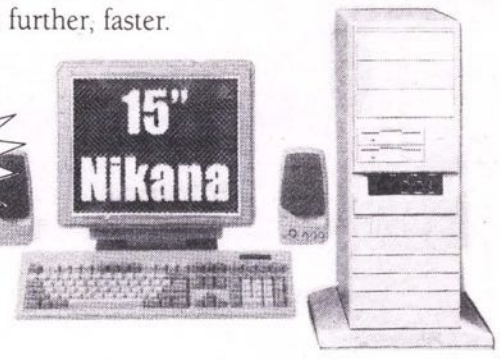
V-COM

The Cyrix 5x86 processor is the perfect fit for your desktop and mobile PC systems. It gives you the fifth-generation performance you want — and much more.

High performance meets smart design. The Cyrix 5x86 processor is packed with fifth-generation features that analyze and process information rapidly. Pipeline stalls and bottlenecks are virtually eliminated with branch prediction and data forwarding. With features such as a 64-bit internal data path, a 16K write-back cache and an 80-bit floating point unit, the Cyrix 5x86 optimizes speed and performance to take you further, faster.



The Cyrix 5x86 PGA processor for desktop PC systems.



The perfect fit means proven compatibility. The Cyrix 5x86 is fully compatible with the software you have — *and* the software you want. Enjoy the powerful features of Windows 95, Windows, OS/2, DOS, Windows NT and more. Speed through the latest multimedia and business applications. With the Cyrix 5x86 processor, you'll get the compatibility you need to run today's software faster. It's the perfect fit.

MICROSOFT WINDOWS COMPATIBLE

V-Com Computer Warehouse
3104 Marine Drive,
Vancouver B.C.
V5S 2H4
Phn: 604-437-8818
Fax: 604-437-1881

V-Com Computers
1220 2nd Avenue
Prince George, B.C.
V2L 3B3
Phn: 604-562-9696
Fax: 604-562-6161

VISA · LEASING

We also accept personal and company checks and corporate purchase orders (OAC). Government sales welcome. Business equipment leasing available.

PC PLACE

#4 - 8145 - 130th St. Surrey, BC (604) 572-8324
101 - 32865 Ventura Ave. Abbotsford, BC (604) 855-8839

Upgrades on special for February.....

MEMORY:

4 MB 72 PIN SIMM (no parity) $159.00
8 MB 72 PIN SIMM (no parity) $299.00

MULTIMEDIA:

6X MULTIMEDIA KIT.....$399.00
JAZZ SPEAKERS FROM..... $ 69.00

WAVETABLE SOUNDCARD:

Upgrade your soundcard to *WAVETABLE SYNTHESIS* !!!!
Plug and Play daughterboard for your 16 bit soundcard.
16 Midi Channels
128 General Midi instruments, 51 Drums
QS501 Wavetable synthesis MPU401 Compatible
4Mb of wavetable samples in 2Mb ROM
$ 99.00

ALL USED EQUIPMENT IS TESTED AND GUARANTEED FOR 60 DAYS !!!

Complete 286 System .....$ 99.00
386sx/16 Color VGA.....$399.00
386dx/40 4/105 VGA.....$699.00
Mac IIci 8/80 Color.....$795.00
Panasonic Printer.....$ 95.00
HP Deskjet Printer.....$175.00
Color VGA from.....$175.00
Laserwriter II $595.00

Check us out for great deals on parts, cables, adapters, controllers, video cards, drives, memory, motherboards, etc... The source for parts, DIY or let us do it for you.

*** We also offer free repair estimates ! ***

We Buy & Sell, New & Used Computers, Parts and Accessories

Please call us with your requirements....

HotJava

HotJava is a dynamic second-generation Web browser. It is the first major end-user application created with the Java language and run-time environment and therefore incorporates all the functionality of Java. The most important feature being its ability to dynamically add to its capabilities. It should be noted that a number of companies have licensed Java for incorporation into their products. The newest beta versions of the most popular browsers, such as Netscape Navigator 2.0, are now Java enabled.

Conventional Web browsers allow the downloading of static pages, which are limited to the data types that the browser recognizes. These must be hard wired into the browser or added as helper applications. This causes obvious problems when new protocols and data types are introduced...the browser keeps growing in size and versions. The interactivity is limited to point-and-click hypertexting, which allows you to navigate through the data in a fairly seamless fashion, but is not interactive in the truest sense.

HotJava can dynamically download Java programs or applets, from anywhere on the Internet, which are then run locally on your computer. This allows the browser to dynamically add to its capabilities in terms of content, data types and protocols. This also effectively moves the interactivity away from the Web server and onto the Web client.

In terms of content this means that anyone browsing the Web who comes across a page containing an applet could use and interact with that applet in real-time. Once again this is because the program or applet is sent automatically over the network and resides on your computer just like any other application you have on your computer. There is currently a growing population of applets on the Web that ranging from animation to spreadsheets.

HotJava is small compared to traditional browsers since all the protocol and data handlers are brought in off the network when needed. For data types this means that when the browser comes across something that it doesn't recognize, it looks for the appropriate handler on the server, as long as it is there in Java code, the browser will upgrade itself on the fly and display the new data form. No need for all those helper applications. Protocol handlers get installed in a fashion similar to data handlers.

RPC (Sales, Repair & Upgrade)

Ask us about leasing. Prices subject to change without notice. MasterCard, VISA service charge 2%

SYSTEMS

486DX2-66 $1210
486DX4-100 $1290
486DX4-120 $1310

* 486 PCI Motherboard
* 4MB RAM, 256KB Cache
* Enhanced PCI EIDE HD/FD Cntrllr
* 630 MB EIDE Hard Drive
* 1.44MB FD Drive
* 2S, 1P, 1G Ports
* PCI video card w/ 1Mb
* 14" SVGA .28 Non-Inter. Monitor
* 101 key Enhanced Keyboard
* 13" Mini Tower Case
* Z-Nix mouse
* 2 Year Parts & Labour Warranty

P-75PCI $1700
P-90PCI $1830
P-100PCI $1920
P-120PCI $2020
P-133PCI $2270

LEASE TO OWN A COMPUTER, PLEASE PHONE

* Intel Pentium® Processor
* 8MB RAM, 256KB Cache
* 1.44 Mb Floppy Drive
* 850Mb EIDE Hard Drive
* PCI Enhanced HD/FD Controller
* 2 serial, 1 Parallel, 1 Game port
* PCI Video Card w/ 1Mb
* 14" SVGA Non-Interlaced Monitor
* 101 Key Enhanced Keyboard
* 19" Mid Tower Case
* Logitech PS/2 port Mouse
* 2 Year Part & Labour Warranty

MULTIMEDIA

16 kit sound card & 4x CD-ROM	$230
Digital SchoolHouse 4X Kit	$430
Multimedia Home 4X kit	$540
Sound blaster 32	$225
Sound Card w/ 2 speakers	$70
16 bit Sound Card w/ 2 speakers	$88
2x speed CD-Rom	$80
Panasonic/Sony 4x SCSI CD-Rom	$295
Toshiba/Plextor 4x SCSI CD-Rom	$395
Toshiba/Panasonic 4x Speed IDE CD-Rom	$178/$168
Sanyo 2x Speed SCSI	$170
Adaptec SCSI CD-Rom Cntrllr w/ Software	$85

We are a member of Better Business Bureau

MOTHERBOARDS (Latest Design)

486DX2-66 with CPU, fan	$160
486DX2-80 256K w/ CPU, fan	$220
i486DX4-100 256k w/ CPU, fan	$280
486DX4-120 256k w/ CPU, fan	$305
P-75 256k w/ cpu, fan	$500
P-90 / 100 256k w/cpu, fan	$620/$680
P-120 / 133 256k w/cpu, fan	$760/$1000

MATH CHIPS

387SX 16 - 33MHz	$55
387SX 40MHz	$80
387DX 20 - 33MHz	$60
387DX 40MHz	$75

Specials

Logitech Mouse	$35
Panasonic 4x IDE CD-ROM	$168
Sony 4x SCSI CD-Rom	$295
Conner 800M TapeBackup	$250
Sanyo 2x SCSI CD-ROM	$175

Printers

Fujitsu DL-700 24pin	$210
Raven 2407 24-Pin color upgradable	$280
Raven Ls-3 1MB 600dpi Laser	$630
Raven LP-470PS Laser	$830
Brother-660 2MB 600dpi	$780
Okidata OL-400e LED	$599
Okidata OL-410e LED 600 dpi	$799
HP 340 portable 600x300 dpi	$430
HP 600C Colour Deskjet 600x300 dpi	$430
HP 660C Colour Deskjet 600dpi	$580
HP LaserJet 5L 600dpi	$699
HP LaserJet 5P 600dpi	$1260
HP LaserJet 5MP 600dpi	$1450
HP LaserJet 4+/4M+ 600dpi	$2050/$2720
HP LaserJet 4V/4MV	$2800/$3990
Canon BJ-30	$330

We repair :
-Monitors
-Systems
-Printers
We upgrade laser printers

MONITORS & VIDEO CARDS

Daytek/ASI 14" NI SVGA .28	$310
Daytek/ASI 14" NI LR SVGA .28	$320
Daytek/Compartner15" NI LR Flat SVGA .28	$470
Daytek 17" LR Flat Screen NI SVGA	$870
ADI 4Gp LR 15" Flat Screen NI SVGA	$540
ADI 5Ep LR 17"	$920
SONY 15sf 15"	$670
NEC XV 15"	$670
NEC XV17 / Xe17 17"	$1150/$1460
SVGA Card 256K Exp. 512K	$50
SVGA Card 1MB	$95
Trident/S3 SVGA Card VLB/PCI 1MB	$100/$100
Matrox Millennium 2mb VRam PCI	$460
Diamond Stealth 64 DRAM 1/2MB VLB/PCI	$245/$315
Diamond Stealth64 Video VRAM 2/4MB	$490/665
ATI Mach32 1MB DRam ISA / VLB/PCI	$169
ATI Mach64 1MB/2MB DRam ISA/VLB/PCI	$205$265
ATI Mach32 2MB VRam ISA/VLB/PCI	$350
ATI Mach-64 2MB/4MB VRam ISA/VLB/PCI	$365/595

DRIVES & CONTROLLERS

630MB EIDE / 850MB SCSI	$260/$299
850MB EIDE	$280
1.08GB/ 1.2GB EIDE	$340/$368
1.08GB SCSI	$460
1.4GB/ 2.1GB SCSI	$1050/$1200
2.1GB Wide SCSI	$1350
2.5" 340MB IDE for notebook	$390
2.5" 540MB IDE for notebook	$580
1.2MB 5.25" Floppy Drive	$65
1.44MB 3.5" Floppy Drive	$43
Fujitsu 230MB optical drive w/ 1 disk	$620
Conner 420/800MB tapebackup	$179/250
Colorado 250/350 parallel port backup	$385/410
Conner 4.0G Int./ext.tape backup	$1295/$1465
VLB EIDE Controller W/ Multi-I/O	$45
VLB EIDE Cntrlr w/ Enhanced I/O	$50
Adaptec 1522/1515 SCSI Ctrlr	$125/$168
Adaptec 2842A VLB SCSI Controller kit	$350
Adaptec 2940/2940W PCI SCSI Cntrllr	$295/350
Future Domain PCI SCSI Controller	$170

NETWORKING

MS-Windows for Workgroups 3.11	$85
Lantastic 6.0 starter kit	$295
Novell 3.12 upgrade (10 user)	$1450
Novell 3.12/4.1 (5 user)	$830/880
Novell 3.12/4.1 (10 user)	$1499/1520
Novell 3.12/4.1 (25 user)	$2620/2680
Eagle 2000+ 16 Ethernet Card	$100
GVC Ethernet Card	$58

cable, connector, terminator & crimping tool

RPC
Computers Ltd.
1796 Renfrew St.
Vancouver, B.C.
(604) 255-1192
Fax: (604) 255-0002
Mon.-Fri. 9:30-6:00 * Sat. 11:00-5:00

HotJava is given an objects reference; an URL. If the handler for that protocol is already loaded, it is used. If not, Hot Java searches, the local system and then the system that is the target of the URL, for the protocol needed to interact with the object; it's then incorporated dynamically. This means you will not need multiple browsers to access data on different servers each with its own proprietary protocol. Also, vender's products will integrate more smoothly with each other, saving great pains for themselves and their users..

Security is of great importance when dealing with a large and heterogeneous network such as the Internet. When you are downloading, installing and running fragments of code imported from all over the place there are obvious dangers. HotJava incorporates all the security measures built into Java, which were described earlier. Could a computer virus get through Java's security measures? Only time will tell.

In Summary

Is Java C++ done right? The jury is still out. Java is a very new technology, in its early stages of development. Considering Java was only introduced six months ago, its off to a roaring start. It has already gaining widespread acceptance and support throughout the Internet community, and is aiming to become the universal standard for transfer of dynamic, executable content over the Web. An impressive list of companies have signed up to license Java, including Netscape and Microsoft.

A developers conference I recently attended in San Francisco was packed with Java enthusiast. Who knows what applications will be developed over the next year by these people. It could be used as the principle engine for interaction and behavior of objects in the next version of VRML. It could be used to provide all kinds of stand-alone applications which are retrieved over the network, used and returned. It could be used in any number of innovative ways because of its dynamically extensible and portable nature. Ladies and gentlemen, start your engines... let the innovations begin! ❑

About the Author: ***Dan DeBellis*** *is a computer consultant and programmer, he can be reached at ddebelli@direct.ca*

Looking To Move Up .... call Super-Byte.

Multimedia Pentium w/ Monitor
$1999
Warranty - 2 yr.
8 Meg Ram.
850 MB Hard Disk.
CD-Rom.
16 bit Sound - Card.
Monitor & Mouse.
Stereo Speakers.

... PENTIUM 75

ZOLTRIX 14.4 VOICE/ FAX MODEM With This Ad - $49.00

96 COMPTON ENCYCLOPEDIA $69.95

PHONE BLASTER 14.4 MODEM With VOICE Messaging, Speakers, 16 Sound Card $349.00

SUPER-BYTE COMPUTERS Ltd.

"We Provide Sales with Service and Training"
CHECK OUT SUPER-BYTE'S LOCAL B.B.S.

210-22529, Lougheed Hwy, Selkirk Center, Maple Ridge, B.C. V2X 0L4

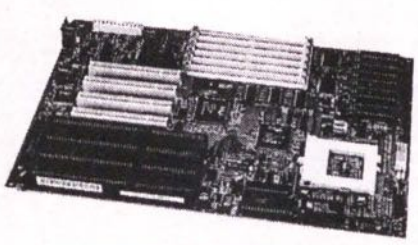
FOR MORE INFO CALL **Phone: 463-8733**

We accept Mutual Exchange Canada Trade Dollars

UNIVELL *Microsystems Inc.*

#107 - 3830 Jacombs Road
Richmond, B.C. V6V 1Y6
Tel: (604) 276-9986
Fax: (604) 276-9983

Dealers Welcome



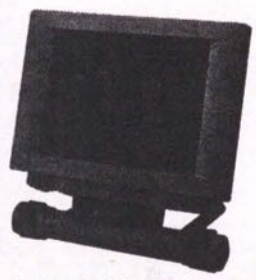
TITAN III

Winning Awards of

AWARDS FOR 1995...
BYTE EDITORS' CHOICE Dec., 95 — THE TOP 20 Nov. 95 "Fastest desktop on the planet" ...PC World
PC MAGAZINE EDITORS' CHOICE Sept. 26, 95
MULTIMEDIA WORLD ALL STAR Dec., 95
"PRODUCT OF THE WEEK" Titan 3 Oct.16, 95 "A Rocket Disguised as a PC" ...PC Computing
PC MAGAZINE Honorable Mention Sept. 26, 95
MULTIMEDIA WORLD ALL STAR Sept., 95

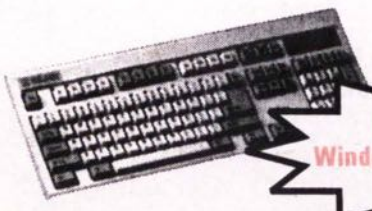
SCEPTRE

14", 15", 17", 21" Plug & Play



11.3" LCD Monitor

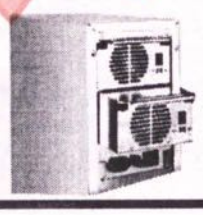
Multimedia Kit
- Mitsumi 4x CD ROM
- Sound Blaster 16
- MS.CD Titles
- (Encarta 96, Works, Money Scences)

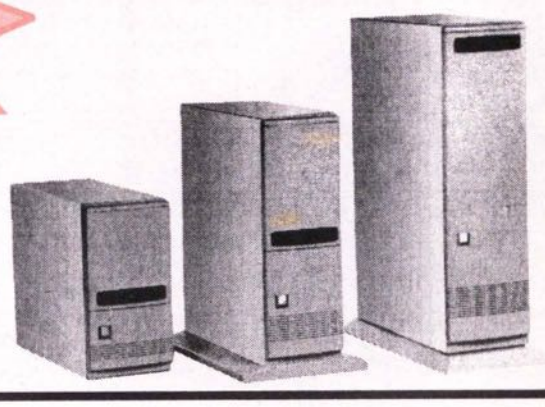


Mitsumi Window95 Keyboard Special

• Prices subject to change without notice.

We also offer a wide range of power supplies including ***green features:***





Digital Editing on your PC

By Diana Sng

Video equipment is becoming more and more computerized. Every day more desktop video products are announced, it's no wonder consumers are confused about which system to buy. Desktop video is like desktop publishing, only instead of print it is video.

The idea of editing video on the desktop with any kind of system basically means the ability to edit out what is not needed from raw video footage, linking the necessary video footage by means of special effects, titling and graphics and ending with a final "master" tape. The reasons why it makes sense to integrate video and computer technologies are: high performance computers are becoming more affordable, computers offer a feature set that can't be produced anywhere else and there is no need to shuttle tape back and forth making access time almost instantaneous and have less wear and tear on expensive video equipment.

There are two forms of editing - tape based, "linear" and digital, "non-linear".

In linear editing, analog VCRs are used as players and recorders together with other video equipment like mixers, special effects generator, character generator and other specialized hardware. These set-ups have been traditionally expensive as they were stand-alone pieces connected together by a myriad of cables. Hardware were tailored to work with other pieces that were often proprietary in nature and incompatibility with other systems resulted more often than not. Video data is stored on tape and played back by way of the VCRs which means time spent in shuttling tape back and forth to find the precise location on the tape. This can be very tedious, time consuming and hard on the read/write heads of VCRs.

In non-linear editing, the editing operations are in your computer system and there is less chance for incompat-

C·C TECH

C.C TECH COMPUTERS

504 EAST BROADWAY VANCOUVER, B.C. V6T 1X4 TEL: 604-8767983 FAX: 604-8767984

ALL SYSTEM WITH TWO YEARS PARTS & LABOUR WARRANTY BUSINESS HOURS: 10AM TO 6PM MON-SAT

486 PCI SYSTEM — A
GIGABITE MOTHER BOARD
AMD CPU
256 KB CACHE
4 MB RAM
850 MB EIDE HDD
1.44 MB FLOPPY DRIVE
1MB PCI SVGA CARD
14"SCEPTRE MONITOR
2*16550S, 1*PARALLEL
MOUSE & PAD
101 ENHANCED KEYBOAR
TOWER CASE
100MHZ -- $ 1100
120MHZ -- $ 1130

PENTIUM TRITON — B
ASUS MOTHER BOARD
256 KB PIPELINED CACHE, PNP
8 MB EDO RAM
850 MB EIDE HDD
2*16550S, 1* PARALLEL PORTS
1 MB PCI SVGA CARD
14" SCEPTRE MONITOR
1.44 MB FLOPPY DRIVE
101 ENHANCED KEYBOARD
TOWER CASE (230WATTS)
MS OR LOGITECH MOUSE
75/100MHZ--$1550/1650
120/133MHZ-$1850/2050

PENTIUM TRITON — C
ASUS MOTHER BOARD
256 KB PIPELINED CACHE, PNP
8 MB EDO RAM
850 GB EIDE HDD
2*16550S, 1* PARALLEL PORTS
ATI or DIAMOND 2MB DRAM
15" MAG DX1595 MONITOR
1.44 MB FLOPPY DRIVE
101 ENHANCED KEYBOARD
TOWER CASE (230WATTS)
MS OR LOGITECH MOUSE
75/100MHZ--$1850/1950
120/133MHZ-$2150/2350

PENTIUM TRITON — D
AUSU MOTHER BOARD
256 KB PIPELINED CACHE, PNP
8 MB EDO RAM
1.08 GB EIDE HDD
2*16550S, 1* PARALLEL PORTS
ATI or DIAMOND 2MB DARM
SONY SX 0.25 MONITOR
1.44 MB FLOPPY DRIVE
101 ENHANCED KEYBOARD
TOWER CASE (230 WATTS)
MS OR LOGITECH MOUSE
75/100MHZ--$2050/2150
120/133MHZ-$2350/2550

PENTIUM TRITON — E
ASUS MOTHER BOARD
256 KB PIPELINED CACHE, PNP
16 MB EDO RAM
1.08 GB EIDE HDD
2*16550S, 1* PARALLEL PORTS
ATI or DIAMOND 2MB DRAM
SONY SFII 0.25 MONITOR
1.44 MB FLOPPY DRIVE
101 ENHANCED KEYBOARD
TOWER CASE (230WATTS)
MS OR LOGITECH MOUSE
75/100MHZ--$2350/2450
120/133MHZ-$2650/2850

PENTIUM TRITON — F
ASUS MOTHER BOARD
256 KB PIPELINED CACHE, PNP
16 MB EDO RAM
1.2 GB EIDE HDD
2*16550S, 1* PARALLEL PORTS
ATI or DIAMOND 2MB VRAM
15"SONY SFII 0.25 MONITOR
1.44 MB FLOPPY DRIVE
101 ENHANCED KEYBOARD
TOWER CASE (230WATTS)
MS OR LOGITECH MOUSE
75/100MHZ--$2550/2650
120/133MHZ-$22850/3050

PENTIUM TRITON — G
ASUS MOTHER BOARD
256 KB PIPELINED CACHE, PNP
8 MB EDO RAM
1.2 GB EIDE HDD
2*16550S, 1* PARALLEL PORTS
ATI or DIAMOND 2MB VRAM
17 MAG DX17F MONITOR
1.44 MB FLOPPY DRIVE
101 ENHANCED KEYBOARD
MS OR LOGITECH MOUSE
TOWER CASE (230 WATTS)
75/100MHZ--$2600/2700
120/133MHZ-$2900/3100

PENTIUM TRITON — H
ASUS MOTHER BOARD
256 KB PIPELINED CACHE, PNP
16 MB EDO RAM
1.6 GB EIDE HDD
2*16550S, 1* PARALLEL PORTS
ATI or DIAMOND 2MB VRAM
17"SONY SFII 0.25 MONITOR
1.44 MB FLOPPY DRIVE
101 ENHANCED KEYBOARD
MS OR LOGITECH MOUSE
TOWER CASE (230 WATTS)
75/100MHZ--$3150/3250
120/133MHZ-$3450/3650

ADD 4 SPEED CD ROM, SOUND BLASTER 16, SPEAKERS (80WATTS, DC ADAPTER) +$ 300.00
ADD 6 SPEED CD ROM, SOUND BLASTER AWE 32, SPEAKERS (80W, DC ADAPTER) +$ 450.00

SYSTEM WITH INTEL ENDEAVOR MOTHER BOARD (BUILT IN SB16 CARD) +$ 100.00
ADD 4 SPEED CD ROM , 80 WATTS SPEAKERS (WITH DC ADAPTER)+$ 200.00
ADD 6 SPEED CD ROM , 80 WATTS SPEAKERS (WITH DC ADAPTER) +$ 280.00
CALL FOR OTHER CONFIGRATION CALL FOR INTEL 166 MHZ OR HIGHER

CCT HIGH QUALITY RIGHT PRICE

MONITORS
14" SCEPTRE ---------- $ 310
15" SCEPTRE N/I,L/R ------- $ 460
15" COMPUPANNER -------- $ 440
15" MAG DX15F (0.28)------- $ 490
15" SONY SF 2 (0.25) -------- $ 670
15" SONY SX1 (0.25) --- -----$ 590
17" MAG DX17F (0.26) ------ $ 910
17" SONY SFII (0.25) ------- $ 1190
17" SONY SE1 (0.25) ----------$ 1450

MEMORY
1MB 30 PIN ---- $ 40
4MB 30 PIN --- $ 140
4MB 72 PIN --- $ 140
8 MB 72 PIN -- $ 270
16 MB 72 PIN - $ 530
4 MB EDO ----- $ 160
8 MB EDO ----- $ 290

DRIVES
635 MB WESTERN DIGITAL HDD ---- $ 240
850 MB WESTERN DIGITAL HDD ---- $ 270
1 GB WESTERN DIGITAL HDD -------- $ 320
1.2 GB WESTERN DIGITAL HDD ------ $ 370
1.6 GB WESTERN DIGITAL HDD ------ $ 470
1.2 GB QUANTUM FIREBALL HDD -- $ 350

MULTIMEDIA
2 SEPPD PANASONIC CD ROM -------- $ 75
4 SPEED PANASONIC CD ROM ------- $ 160
4 SPEED TOSHIBA CD ROM ---------- $ 170
4 SPEED PHILIPS CD ROM ------- ----- $ 160
6 SPEED CD ROM ---------- ------ $ 240
16 BIT SOUND CARD ---------- $ 75
SOUND BLASTER 16 PNP ---------- -$ 105
SOUND BLASTER AWE 32 ---------- --$ 190
SPEAKERS ... FROM $ 10.00

VIDEO CARDS
ATI MACH64D 1M/2M DRAM ------ $170/230
ATI MACH64V 2M/4M VRAM ----- $ 340/560
DIAMOND STEALTH 1M/2M DRAM-----$ 180/240
DIAMOND STEALTH 64 3200 2M VRAM ----$ 340
DIAMOND STEALTH 64 VIDEO 2M VRAM - $ 420
TRIDENT 9440 1MB PCI SVGA CARD - $ 85

MODEMS
14.4 INTERNAL VIOCE FAX/MODEM - $ 80
14.4 USR INTERNAL FAX/MODEM --- $ 125
14.4 USR INT VIOCE FAX/MODEM -- $ 160
28.8 INT ERNAL FAX/MODEM ------- $ 180
28.8 INT USR FAX/MODEM ----------$ CALL

CALL US TO GET THE PRICE FOR : MOTHER BOARD, PRINTER, KEYBOARD, MOUSE, CASE & OTHERS. PHONE US TO SAVE YOUR MONEY

PRICE SUBJECT TO CHANGES WITHOUT NOTICE

ibility. One main advantage is the easy exchange of data between programs for titling, graphics and still images. Access is also generally faster, in some cases almost instantaneous. Non-linear editing allows for video material to be digitized onto your hard drive eliminating wear and tear of your VCR and since it gives you immediate access to your video frame it is faster. Because it is digital, it is also more precise.

There are numerous manufacturers all launching into desktop video with hardware and software. How is one to decide on what editing system to use? In making a decision you will have to consider the following factors: Quality, Productivity and Cost. This will determine which desktop video system you will purchase. Generally there will be a trade-off. For example, if you require high quality then the cost factor will be quite high, if you have a low budget then productivity and quality may suffer. Since digital editing is now the main "domain" of the video editing industry let's concentrate on digital editing.

Image quality has been a problem faced by most manufacturers when designing a desktop non-linear video system. The problem begins with the volume and transfer rate of video information. Under the NTSC standard, 18Mb of video information must be processed per second which is too much for the desktop computer to handle. Most professional desktop video systems use Motion-JPEG compression technology to compress this volume of information to allow the PC to process it, while maintaining a minimal loss in video quality. Compression occurs when parts of the image are deleted or repeating portions of the image are expressed in a short hand format. Generally speaking, when more portions of the image is deleted, more images or frames of the video can be processed through the computer but this results in an image of lower fidelity. As more of the image is retained, the higher the image fidelity but not as many images are processed. You go with the final image fidelity, frames processed per second ratio based on what you're willing to compromise - speed versus image fidelity.

Quality of the video depends on the tools you use to edit with, therefore the higher performance your computer system is (bus speed and width, processor, video, memory, hard drive capacity and access speed and software) the better you are in gaining quality and time. The age old saying, "time is money" probably means going non-linear could prove to be more cost effective. With all the various animation, 3-D special effects, rendering and character generator programs available, the capability to produce movies from the desktop is here.

The greatest advantage in going with a desktop video editing system is improved productivity for the video editor. This can be maximized to the fullest when the editor is using existing digital resources (computer system, editing software packages and not be encumbered with stand-alone analog video equipment such as mixers and character generators.) In using a computer system to edit, the editor has frame accurate access to every sequence of his video footage thus allowing him to edit faster and be more creative. In the past, to edit a video sequence with titling, graphics and special effects, the editor had to do this in several steps with other equipment and required skilled operational knowledge of many different

Autodesk 3D Studio
Student Version 4.0 $775

SPECIAL with this AD and Student ID
Regularly $850

Upgrade from version 3 to version 4.0 $395
3D Studio Version 2.01a students only $280
3D Studio Version 4.0 full commercial
With upgrade to version 5 MAX...CALL

Autodesk. Authorized Dealer

2 & 3D Animation & Modeling Full Package with all Manuals, Disks, CD & Hardware Lock

PC to TV ENCODER HIGH QUALITY

FLICKER-FREE & 16.7 Million Colours $275
Notebook, laptop, desktop with VGA output to TV, Colour smear filter, Supports composite and S-Video output All cables 640 x 480 (NTSC) Flicker-Free image in 16.7 million

Autodesk Animator Studio
24 bit colour, AVI, sound and a full suite of 2D animation tools $395

Complete Pentium & DEC Alpha Systems
Call for Best prices!

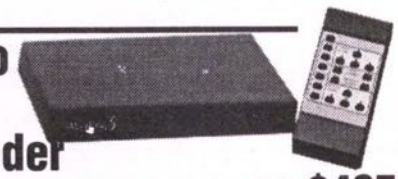
IC Technology
3D Studio Animation Targa+ Cards PC Video Multimedia Video Grab DPS-PVR/PAR

(604)681-7057
205-1102 Homer St. Vancouver B.C.

DIGITAL VIDEO & ANIMATION

DPS PERCEPTION VIDEO RECORDER Outstanding PROFESSIONAL VIDEO quality from DPS (makers of the PAR). SCSI-2, PCI bus, Component, s-Video& Betacam @ 60 fields/ sec, 720x480 resolution. Real-time capture and playback - Video & Animation.

PC to TV Encoder



ENCODER - Highest Quality True colour, Full Remote Control, No TSR to 600 x 800 res. $495 Sale with AD

PC Video Editing Boards and Systems
We sell and support a complete line of Video capture, playback and animation products for multimedia and professional applications. Talk to us before you buy!
MIRO FAST VIDEO Targa2000 DPS-PAR ADDA
RAZOR PREMIERE ANIMATION MASTER TRUESPACE

FAST FPS 60 Edit quality video on your PC $1395
ASK FOR SPECIAL STUDENT PRICES

ACME Acme Computers
1935 Burrard St.(at 4th), Vancouver, BC
Hours: 10am - 5pm Closed Sun & Wed
Free system delivery, details in store.
Tel:(604)736-3668 Fax/Ans: 736-3385

IBM ThinkPad 701CS

Intel DX4-75MHz COLOR
8MB RAM, 540MB HDD
Full Size TrackWrite KB
10.4" DSTN Display
14.4K F/M w/answering
Full 16-bit Audio
Integrated Infrared
3Y IBM Ltd Warranty.

Software:
OS/2, IBM DOS 6.3, Win 3.11 and much more .....
$2895

IBM Aptiva Upgrades:
1MB to 2MB Video RAM.....$119.00
8MB to 16MB IBM RAM.....$285.00

CREATIVE CREATIVE LABS INC. Value/Discovery 4x CD Kit $359/429 Performance 6X CD Kit $525

Repair & Upgrade - Free Estimate

LaserJet 5L True 600 X 600dpi $665
HP Deskjet 660C/600C $550/350
Hewlett Packard Authorized Retailer

HP 600C:
-4 PPm
-600dpi B&W
-3Y warranty.

Hundreds of CD's & Book titles
NO GST & NO PST

BJC-70 Portable Color $465
BJC-4000 Color Bubble Jet $399
Canon Authorized Printer Retailer

BJC 210: $375
-Canon Creative CD
-720x360dpi B&W
-2Year Express Warranty

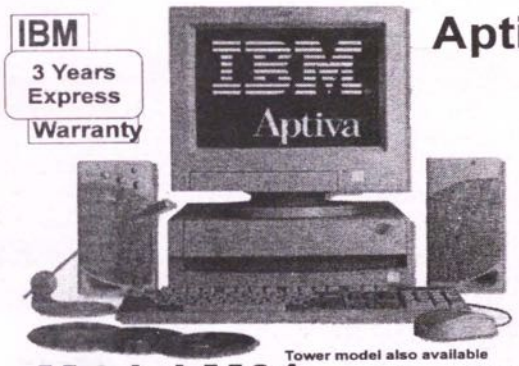
INTERNET Email : acme@unix.infoserve.net
http://www.infoserve.net/acme

Value, Service & Quality You Can Trust

Aptiva multimedia computers are everything you want and more. Easy enough for a novice, powerful and versatile to satisfy professionals.

IBM Aptiva

IBM 3 Years Express Warranty



Tower model also available

Aptiva "Magic" M61
-16MB RAM
-2MB Video RAM
-1.6 gig hard drive
-28.8 Voice Modem
-MPEG full motion video
-4X Speed CD-ROM
-Wavetable & 30W speakers
Rapid Resume
Voice Recognition

MS Windows95 Software: Works 4.0, Quicken, Descent Flight of the Dream Team, Pitfall, Endorfun, Delrina, Nicklaus Golf, Silent Steel, Compton Interactive Ency, Cyberia, Magic Theatre, Jumper start Kindergarten, Undersea Adventure, Audiostation, Music Mentor & much much 180Day or HoursFreeInternet

IBM Business Partner Retailer

Model M61 Pentium 120 with 16M RAM $4195
14" IBM Monitor included

IBM & Aptiva are registered trademarks of the International Business Machine Corp. *1 year warranty on IBM monitor. Prices subject to change without notice & include 1.5% cash discount.

pieces of hardware or else he needed other operators. In either case, more time is required to edit the motion picture.

Cost, in desktop systems, would be associated with purchasing a computer setup (hardware & software), service and training. These costs are normally offset by savings in daily operation. Also, one should take into consideration seminars on movie editing. Cost wise, they are generally more expensive than computer oriented training. Most experienced editors edit projects on professional desktop systems in virtually half the time required on an analog system, this way they can finish twice as many projects as they normally would. There are various types of desktop editing systems from low end (prosumer - non-linear) to high end (professional - linear & non-linear) systems now readily available. Prosumer systems may range approximately from $1000 and up while the Professional systems will range from $5000 and up. Generally, the prosumer models are bundled with third party software like Adobe Premier, Animator Pro etc...whereas the professional systems are manufactured by one vendor.

Linear versus non-linear? Linear is editing with tape sources whereas non-linear is the technique of compressing and decompressing video and being able to edit directly from your hard drive. For the computer user, going non-linear would be advisable. Video users who tend to prefer the linear aspect of video editing, being skeptical of computer technology, must realize the video industry is advancing towards digital video - therefore video users will have to advance along with this technology otherwise they will be left far behind.

Manufacturers of non-linear editing systems are varied. Avid, FAST, Matrox, Toaster, to name a few, are some that have non-linear broadcast systems on the market today. These manufacturers are in the "professional" category. Some of the prosumer type systems are FAST with the Movie Line Products, Miro with the DC-1 and the newly arrived DC-20 and Creative Labs with their VideoBlaster.

The power of desktop computers for video editing is the ability of the computer to store images. The computer system is able to store, in video terms, a single frame, enabling desktop video editors to store, retrieve and manipulate hundreds of frames, therefore full motion, nearly lossless or full image fidelity, video can also be compressed (digitized) and stored.

Where do you start looking for a desktop editing system? One, would be to check out your local newsstand for video magazines, like Videomaker, Desktop Video, AV Video etc... Then check out the manufacturers who will have a listing of their distributor/dealers, contact these dealers for a demonstration, catalogue, pricing and some may even have a Web site. You can also talk to people who are using desktop video systems and get their opinions. The basic computer I would suggest to start with would be a full blown multimedia computer station with top of the line audio and video boards. Then look for a consumer hardware/software combo editing package that fits your needs. I suggest starting with a prosumer type editing system till one becomes more familiar with desktop video and then upgrade.

Video editing courses can be found in education facilities like Langara, Vancouver Film School and even the Vancouver School Board. Once you have the basics, it will not be difficult to be a master of non-linear video editing. ❑

About the author: ***Diana Sng*** *is with Commercial Electronics Ltd. She can be reached at (604) 669-5525*

ICI INFOWAVE COMPUTER INC.

Tel:(604)273-1368 Fax:(604)278-5268
1780-4311 Hazelbridge Way, Richmond, BC V6X 3L7
(Within N-E corner of Parker Place Shopping Centre, Please see map below)

Store Hours:
Mon-Sat:10-6:30
Sun :11-6:30

All systems come with 5-year labor & 2-year parts warranty

Pentium-100MHz

-256K Pipeline Burst Cache
-14" N-I L-R SVGA Monitor
-8MB RAM up to 128MB
-850MB HDD
-1.44MB 3.5" FDD
-Enhanced IDE & Fast I/O
-PCI 1MB SVGA Card
-101 Enhanced Keyboard
-Mid-size Tower Case
-MS-Comp. Mouse + Pad

1598
Effective Feb. 1, 96

4x CD-ROM

-Panasonic 4x CD-ROM
-SoundBlaster 16 Sound Card
-Dual Shieled Stereo Speakers
-Encyclopedia'96 & 5 CD Titles

1888

UPGRADE OPTIONS:

Pentium-120 (from P-100)	***+$150***
16MB RAM (from 8MB)	***+$300***
1.27GB HDD (from 850MB)	***+$80***
Creatix 28.8K Fax/Modem	***+$178***
Windows 95 (full version)	***+$130***

Pentium-133MHz

-256K Pipeline Burst Cache
-16MB RAM (up to 128MB)
-1.27GB HDD (mode 4)
-PCI 64bit 2MB DRAM Card
-15" N-I L-R SVGA Monitor
-Panasonic 4x CD-ROM
-Soundblaster 16 Card
-1.44MB 3.5" FDD
-Enhanced IDE & Fast I/O
-101 Enhanced Keyboard
-Mid-size Tower Case
-MS-Comp. Mouse + Pad
-Dual Shieled Stereo Speakers
-Encyclopedia'96 & 5 CD Titles

2788
Effective Feb. 1, 96

UPGRADE OPTIONS:

Pentium-150 (from P-133)	***+$call***
Pentium-166 (from P-133)	***+$call***
1.6GB HDD (from 1.2GB)	***+$80***
Cardinal 28.8K Voice/Fax/M	***+$248***
6x CD-ROM (from 4x)	***+$100***

Monitors

Proview 14"/15" N-I L/R	$288/438
Sceptre 14"/15" N-I L/R	**$318/488**
Sceptre 17" .28/.26	**$888/998**
MAG 15" DX / 17" DX	$498/928
NEC 15" XV/XE	$648/768
NEC 17" XV/XE	$1098/1298
Sony 15" SF/17" SF	$678/1268

Video Cards

S3 PCI 32 bit 1MB / 2MB	$90/150
S3 PCI 64 bit 1MB / 2MB	$120/180
ATI PCI Mach64 2MB D/V	$240/360
Diamond PCI Stl64 2MB D/V	$240/360
Matrox Mill. 3D 2MB/4MB W	$390/630

Drive/Controller

540MB Fujitsu	$238
850MB Quantum/WD	$268/278
1.2GB Quantum/Seagate	$348
1.6GB Maxtor/WD	$428/448
2.1G/4.2G Seagate SCSI	$998/1418
PCI SCSI Adaptec 2940/W	$280/350
Colorado 800MB Tape Drive	$238
Conner 420/800MB Tape D.	**$180/250**

Network Controller

GVC Ethernet 16bit Combo	$78
Intel EtherExp. 16bit	$168
Intel EtherExp. PCI 32bit	$228

Printer/Scanner

Canon BJC-210 Color	$368
Canon BJC-4000 Color	**$398**
Epson Stylus IIs/II Color	$388/598
HP DeskJet 600C Color	$398
HP DeskJet 660C Color	**$540**
HP DeskJet 850C Color	$678
Canon LPB-430W 300dpi	**$550**
Brother HL641 300dpi 6ppm	$498
Brother HL660 600dpi 6p 2M	$698
HP 5L 600dpi 4ppm 1MB	**$668**
HP 5P 600dpi 6ppm 2MB	**$1188**
HP 5MP 600dpi 6ppm 2MB	$1398
HP 4M+ 600dpi 12p 6MB PS II	$2638
HP ScanJet 4C Color Flatbed	$1318

Modems

14.4K Voice/Fax/Modem Int.	$80
Creatix 28.8K V.34 Fax/M Int.	**$178**
Cardinal 28.8K V.34 V/F/M Int.	**$248**
Cardinal 28.8K V.34 F/M Ext.	**$248**
USR 28.8K Int./Ext.	$268/288
USR 28.8K Voice Int./Ext.	$298/318

Multimedia

Panasonic 4x CD-ROM IDE	**$150**
Creative/Teac 6x CD-ROM	**$250/280**
Soundblaster 16 / AWE 32	**$108/188**
Creative Performance 4x/6x	$488/520
Creative Discovery 4x PnP	$418

MotherBoard

VLB 486DX2-80/256K	$198
PCI 486DX4-100/256K	$308
PCI Pentium-100	$598
1MB/4MB 30pin	$45/168
4M/8M/16M 72pin	$Call

Notebook

SCEPTRE SOUNDX

486SX-33/4M/340M/Clr	$1498
DX-100/8M/540M/Sound/Clr	$3098
P90/8M/810M/CD-ROM/Clr	$3998
P-100/8M/810/CD-ROM/Clr	$4500
NEC DX4-75/4M/350M/Clr	$2628
NEC P90/8M/810M/CD-ROM	$6268

Chinese Input

Twinbridge 4.0/Win95 ready	$278
Truetype FontPack (3 sets)	$148
GoGo Pen System	$298

Free estimate on upgrade & repair

All prices Have reflected 2.5% cash discount and are subject to change without prior notice.

CD Titles

Over 300 titles in stock, call for those not listed. Try before buy.

Education

3D Dinosaur	28
American Heritage Talking Dictionary	28
An Adventure into Human Body	28
Animals, San Diego Zoo	18
Arthur's Teacher Trouble	20
Carmen Sandiego Deluxe	25
Four footed Friends / Stradiwackius	25
Gus Goes To Cybertown	18
Just Grandma And Me	25
Math Drill (3.5)	48
Mavis Typing for Kids / Websters Dic	28
MS Ancient Lands*	38
MS Dangerous Creatures*	32
MS Golf*	28
MS Musical Instruments*	38
N.G.S. Butterflies	18
N.G.S. Spiders	18
N.G.S. Whales	18
Peter Pan / Eagle Eyes	28
Pinocchio	28
Safety Monkey	28
Scooter Magic Castle / Eagle Eyes	28
Spell It 3 / Kids Works 2 / Cruncher	28
Virtual Body	28
Welcome to Bodyland	28
What is a Belly Button	28

Reference

Complete Guide to Drugs	32
Complete Guide to Symptoms	32
Compton's Encyclopedia 95	25
Family Doctor 3rd Ed.	25
Grolier's Encyclopedia 96	28
Linux Developers Res. (4 CDs)	28
Mathematics Encyclopedia	30
Mathematics Library	30
Mayo Clinic-Family Health Book	20
Mayo Clinic: Family Pharmacist	25
Mayo Clinic: Sports Health & Fitness	25
Mayo Clinic: The Total Heart	25
MS Encarta' 95*	50
MS Works 3.0 / MS Money 3.0*	48
Travel Map	28
World/US Atlas/Chessmaster/Mavis	25

Games

7th Guest	23
Aces of the Pacific	28
Body Works	25
C.H.A.O.S. Continuum	25
Day of Tentacle	28
Dark Forces	43
Dawn Patrol	32
Doom II	38
Game Solver	28
Indiana Jones & Fate of Atlantis	28
Journeyman Project Turbo	28
Kings Quest VII	33
Lord of the Ring	28
Menzoberranzan	25
Myst	43
Nascar Racing	35
Outpost	25
Panzer General	25
Quantum Gate	18
Rebel Assault	28
Return to Zork	18
Sam & Max Hit the Road	25
SimCity 2000	28
Top 100 Action Games	18
Ultimate Domain	18

Multi-Lingual

300 Poems (Tan Dynasty)	32
Around the World in 80 Days	28
Chinese Folk Arts	32
Chinese for Travel & Business	32
Chinese Proverb Stories	32
Conversations in Six Languages	28
Fairy Tales in 5 Languages	28
Learning English through Games	28
Lexicomp Vocal Dictionary	68
Sun-Zi War Strategies	32

IBM, Sears Looking to Sell Prodigy?

After investing more than $1 billion over the past decade, IBM and Sears, Roebuck & Co. reportedly are looking at whether to bail out of their joint ownership of the Prodigy online service.

Writing in The Wall Street Journal, reporters Bart Ziegler and Jared Sandberg, noting both IBM and Sears are commenting, quote industry executives as saying:

- Sears has retained investment bankers to explore selling its 50 percent stake in Prodigy, seeking as much as $500 million, and is looking at whether to sell the stake in a public offering.
- IBM has hired an investment banking firm of its own to study what to do with its half ownership.

The paper says its sources say AT&T last month approached IBM about possibly buying Prodigy in its entirety with the cooperation of Sears, "but IBM is believed to be leaning against an AT&T deal, in part because it views the phone company as a competitor."

"Moreover," adds the Journal, "AT&T may be less interested now, having just decided to phase out its own commercial online service in favor of an Internet-based service."

The 12-year-old Prodigy "has only flirted with profitability," the Journal comments, "hampered by years of stodgy marketing, cartoonish graphics and, more recently, infighting between its parents."

The paper notes Sears for several months has had Goldman, Sachs & Co. trying to round up potential buyers, "but apparently sought too high a price. It also has been hindered by concern among potential buyers that IBM wanted to run the show."

(Under the terms of the Prodigy alliance, IBM can reject any potential purchaser of Sears's stake, and "IBM executives have said privately they want the upper hand in managing the company," the Journal says.)

NT Nicer Computer & Services
Tel (604) 377-4982 Fax (604) 435-3222

Special $3799
SPECIAL GIFT
SCEPTRE 3000 With CD-ROM Drive
- Intel Pentium 90MHz
- 8MB RAM
- 540MB Hard Drive
- 16 mm Trackball / Trackpoint

BYTE
SCEPTRE Authorized Dealer

Upgrade to 17" sceptre (Plug & Play)for addition $399

Special

Acer A-Open Quality System
- Acer Ap5c Mainboard 256K w/Triton Chipset
- Pentium P5-75 CPU w/heat sink
- Acer P60 S3 VGA 1MB exp. 2MB
- Acer/Panasonic 4X CD ROM Drive
- S32 w/Vibra 16 W95 P&P
- 8 MB RAM exp. to 128MB
- Quantum 1.28GB (mode 4)
- Panasonic 1.44MB Floppy Drive
- 104 Windows 95 Keyboard
- Microsoft Mouse
- Sceptre 15" Plug & Play monitor
- Acer Mid Tower Case

Special $2199

A Open
intel inside pentium

Acer Family Pentium System
- Acer Ap5c Mainboard 256K w/Triton Chipset
- Pentium P5-75 CPU w/heat sink
- Cirrus Logic 5440 1MB w/ MPEG exp. 2MB
- 8 MB RAM 72pin
- WD 850MB HDD
- Panasonic 1.44MB Floppy Drive
- Keytronic 101 Enhanced Keyboard
- Microsoft Mouse
- 14" Sceptre Plug & Play Monitor
- CS-211D Mini Tower P.S.

Special $1699

Acer Authorized Dealer

3 years parts and labour warranty.

For upgrade: 6X CD ROM Kit w/Sc $359.00

Prices are subject to change.

yes It runs with NetWare · Canon · FUJITSU · NEC · Seagate · HEWLETT PACKARD · DIAMOND
EPSON · TOSHIBA · CREATIVE · WESTERN DIGITAL · Quantum · SCEPTRE

MapleOak Computer Solutions

Novell Authorized Reseller · AST · TOSHIBA · 3Com · brother · COMPUTER ASSOCIATES Software superior by design · NEC · HEWLETT PACKARD · IBM BESTeam

Pentium 100 PCI $1688
8MB RAM, 850MB EIDE Hard Drive
14" SVGA Color Monitor, NI, .28, LR
1 MB PCI Video Card, 3.5" FD, KB,
MS Mouse, MiniTower Case, DOS

Options :
Pentium 75/90.. $1588/$1638 Pentium 120/166 .. $1850/2588

486DX4-100 LB $1199
4 MB RAM, 850 MB EIDE Hard Drive
14" SVGA Color Monitor, NI, .28, LR
1 MB LB Video Card, 3.5" FD, KB
MS Mouse, MiniTower Case, DOS

Options :
486dx2-66/120....$1139/1239 Cryix 5x86-100..... .$1299

Customize Your Dream System

4MB to 8MB .....+ $140	8MB to 16MB .....+ $275
15"/17" Monitor .. + 159/529	NEC MultiSync XE15 .....+ $369
ATI Xpression 1MB .. +$129	ATI GraphicsProTurbo .....+ $349
Diamond Stealth64.....+$259	14.4/28.8 FAX Modem ...$65/195
Win 3.11/Win 95 .....+$85/99	1.2 GB EIDE HD ..... + $70
4x CD-ROM/SB16/Spks.$269	MPEG/3D Video .....+ $55/359

5 years warranty on labor & 2 years warranty on parts.
Third year parts warranty, add $50, First year on-site warranty, add $70.

Brand Name System (Monitor extra)
AST Bravo 4/66D 8MB 540 MB HD $1799
NEC P100 8MB 1GB HD 4x CD $3164
IBM dx4-100 8MB 540MB $1888

Notebook
Toshiba T2130cs 486/75/8/520/DSTN Color $2849
AST Ascentia 910N 486/75/8/510/DSTN.....$3899
NEC Versa M 486/75/8/340/DSTN Color $2769
IBM ThinkPad 486dx4-75, 8MB 540MB DSTN $2888

Special Offer
HP Color Scanner IIcx $1199
Accpac Plus GL/AR V6.1.....$468ea

Upgrade Your Systems

Memory Upgrade (Can't run some program? slow? Out of memory?)
1/4 MB, 30 pin ..... $39/139 8/16 MB, 72 pin $275/549
EDO 4/8MB ....$155/300 Memory Converter 30->72..... $39

Hard Drive & Tape(Not enough space to install new program?)
850MB/1.2GB/1.6GB. $269/339/419 1/2.1 GB SCSI HD $395/935
SyQuest EZ135 External SCSI/Internal IDE/Cartridge.....$329/269/38
800MB TapeBackup,para ..... $229 HP Colorado 800MB.....$270

Internet Upgrade (Infromation Super Highway?)
14.4/28.8 Voice Fax Modem ...$85/238 Internet Access Kit.....$19.95

Multimedia Upgrade *(Access CD-ROM information?)*
CD-ROM 2x/4x/6x .. $79/159/239 SoundBlaster 16/AWE32.$105/225
MS Works & Money (CD) .... $39 SoundBlaster 16 MCD w/ASP.$220
Microsoft Bookshelf95.....$49 *Coreldraw 4.0..... $69*
4x CD-ROM/SB16/Spks..... $269 2x CD-ROM/SoundCard/spks $185
16 Bit Sound Card w/MCD .....$69 Pioneer 4.4x SCSI CD-ROM $255
Family Doctor ..... $18 World Atlas 4 Pack $28

Printer *(Make your job looking nicely)*
HP DeskJet 660C/850C..$525/675 Canon BJ-4000C..... $395
Brother 641/660..... $499/688 Epson Stylus IIs/II..... $395/595
HP LaserJet 4+,2MB ..... $1999 HP LaserJet 2/4mb upg....$189/279

Motherboard Upgrade *(Run too slow? spend a lots time to wait?)*
486dx-66/100/120.. $189/239/279 Pentium 100/133/166. $629/979/1529
Pentium Overdrive P83 (upgrade 486 system to pentium 83) $349

Software Upgrade

MS Office for 95 Upg..... $329	Winfax Pro 4.0.....$129
Quicken 4.0 Deluxe.....$89	CA Accpac Plus GL/AR 6.1. $469each
WordPecfect 6.1 ..,.....$338	Lotus 123 5.0 upg. $138
Simply Accounting 4.0b.. $169	MCafee Virus Scan $75
Norton Utilities 95 .....$155	ReachOut 5.0 Host & Viewer $149
IBM Wrap Connect $245	QuickTax (WinTax) ..... Call
MS Office 4.2 e $248	Simply Money (CD) $29

Others

2nd Printer Port.....$19	3.5"/5.25" Floppy Drive $38/58
10 3.5" Diskette $4	APC Surge Arrest $28

Network Support *Service Contract available*

Network Operating System:
Netware 4.1 (5/10/25/50/100) $649/1499/1985/2643/326
Windows NT Server 3.51/Workstation/Client Lic $779/349/49
MS SQL Server 6.0 for NT..call *WFW 3.11/Win95.... $85/140
LAN Server 4.0 ..... $849 Lantastic 6.0 ..... $112
Personal Netware 1.0 .....$149 SmartPrinter starter Kit....$215

Network Hardware:
Intel EtherExpress Pro ..... $146 3COM Ethernet III, TP....$129
Intel EtherExpress Pro PCI.. $169 SMC EL 16T ultra $129
Xircom/3com PC Card $185/228 Pocket LAN adaptor $159
Intel Netport Printer Server . $299 3com 8 Port Hub 10BaseT$199
APC UPS-Backup 600VA....$355 ExaByte 2/4GB.... $1299/1399
AST Server Manhattan P60, 16MB,1.0GB, CD-ROM $3972
IBM PC Server P75 16MB,1GB SCSI, 4x CD-ROM $4299
HP Netserver 486/66 8MB, 1GB SCSI $4777
HT Server P120 32MB, 2*1GB SCSI $3399
HT Server DX4-100 16MB, 1.2 GB EIDE $1999
Cable 25'/50'/100'/500' (BNC or TB)..... $15/25/35/120
Terminator/T-connector/Connector ..... $5 each

CD Special

7th Guest..... $19	Arthur Birthday Surprise..... $29
Arthur's Teach Trouble $19	Animals $18
Bodyworks 4.0 ..... $24	Business Library.....$24
Children's Encyclopedia $28	Chinese/English Dictionary $28
GuideBook To Mathmetics $24	Groliers Encyc. 95/96..... $15/29
King Quest VII..... $29	Interactive Chinese $28
Just Grandma & Me $23	Lawnmower Man $18
Math Blaster (age 6-12) $29	Mayo Health Clinic $24

VISA · Shopping On-Line http://mindlink.net/maple · MasterCard

Maple Oak Computer Solutions Inc. (Since 1990)
314 W. Pender St. Suite 202, Vancouver, BC V6B 1T1 (Downtown)
Tel: 681-3770/3792 FaxBack: (604) 681-7771
Fax: (604) 681-3739 E-mail: Maple@mindlink.bc.ca
BBS: (604) 681-4408 Lease Internet: http://mindlink.net/maple

MIDAS Technology Inc.

3771 Jacombs Road #530
Richmond, B.C. V6V 2L9
Tel: (604) 276-2860
Fax: (604) 276-2862

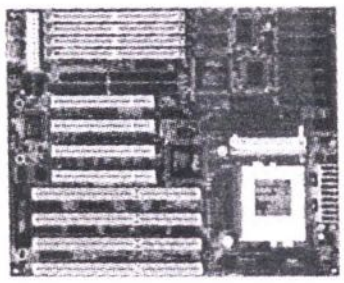
Your systems partner today and tomorrow.
we promote on quality not name.

Chaintech

ISO 9002 REGISTERED

Chaintech 586IDM (Triton Chipset)

- Intel 75-180MHz Processor, ZIF socket 7
- 72-pin SIMM socket X4
- Support EDO type DRAM
- Pipe-lined Burst SRAM on board
- PCI P&P BIOS
- Intel triton chipset
- 4 ISA Bus slot, 4 PCI Bus slot (all support Master Mode)
- Support two Enhanced IDE interface
- On board Super I/O controller



OEM dealers are welcome

BTC®

BTC 5539k Windows 95 keyboard

Designed for Microsoft Windows 95

Other products also available, cases, sound cards, CD-ROM, VGA cards.
Exclusive distributor in Western Canada.

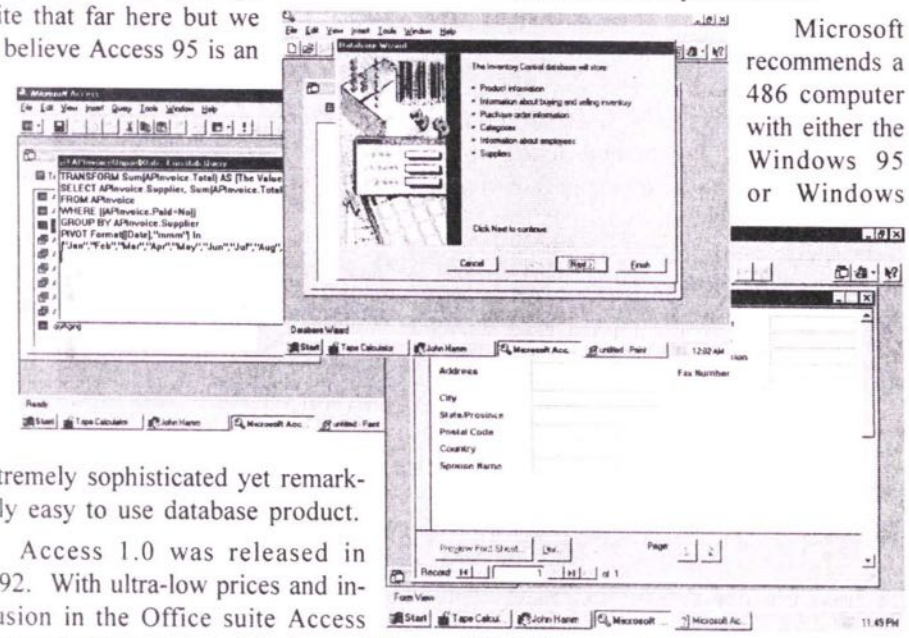
Dealers Inquiry only **(604) 276-2860**

Database Developments

Access for Win 95

By John Hamm

When Microsoft released its best-selling **Office 95** suite of business applications to coincide with the release of **Windows 95**, database users had to settle for the old 16 bit version of **Access** along with a coupon until the upgrade became available. Well, the wait is over and **Access for Windows 95** is finally here just in time to be called the "Product of the Year" (1995 that is) by major computer publications. We won't go quite that far here but we do believe Access 95 is an extremely sophisticated yet remarkably easy to use database product.



Access 1.0 was released in 1992. With ultra-low prices and inclusion in the Office suite Access soon gained major market share of the database market and as many as 5 million users. Price and marketing may have been the initial forces behind the rapid growth in acceptance of Access but it has been usability features that have made it so popular.

This latest version, numbered 7.0 to keep it in synch with the rest of the Office product line, continues Microsoft's strategy of making all aspects of database use and design easier for the new user and veteran alike. Wizards and online helpers guide the user through every aspect from design of the initial data tables to the production of reports and labels.

Minimum Requirements

Microsoft recommends a 486 computer with either the Windows 95 or Windows NT 3.51 operating system. You must have a minimum of 12 megs of ram memory and 14 to 42 megabytes of disk space. We found these requirements to be the very minimum. On a 486/66 with 16 megs of ram we found Access 95 to be acceptable but a little more sluggish

PC CONNECTIONS
A Division of MPC Technologies Inc.
6600 NO.3 Road, Richmond Tel : 270-4883 Fax : 270-3812

MasterCard VISA Interac DIRECT PAYMENT

Intel Processor Dealer

- Warranty direct from Intel
- Certificate of Authenticity
- Ball bearing integrated high quality heatsink fan

Intel Pentium® processor based system
Gigabyte GA-586ATboard w/Intel Triton chipset
256K Cache, PNP BIOS, onboard EIDE and fast I/O
8MB RAM, Max. 128MB RAM
PCI SVGA card w/1MB DRAM
730MB EIDE hard drive
1.44MB floppy drive, 15" Mini-tower case
104 keys Windows enhanced keyboard and mouse

75Mhz Pentium processor	$1,249
90Mhz Pentium processor	1,369
100Mhz Pentium processor	1,449
120Mhz Pentium processor	1,549
133Mhz Pentium processor	1,769

Monitors sold seperately. 2 yrs parts & labour warranty on system.

Want improved productivity? Come in and try our full working demo on the most versatile network software.

WINDOWS NT SERVER Windows 95 NetWare

We are here to serve you.

Novell Certified NetWare Engineer
Certified Novell Administrator
Microsoft CERTIFIED PROFESSIONAL Product Specialist

Want to run Windows 95 **Smoothly?**
Intel 486DX2-66 OverDrive $89 (Reg. $179)
4MB SIMM 72 pins $149 (Reg. $169)
Bundle Price $238 ~~$338~~

Windows 95 peer-to-peer networking
2 x Ethernet network card
1 x Coaxial cable 25' with connectors and terminators Only$ 145

Used Dept

1MB 30pin SIMM RAM	$35
Hard drive (100MB +), from	65
2400bps modem	19
386 system starting at	249
486 system starting at	399
Books at half price	

We do trade-in and consignment !!!

than we would have liked. On a 100 MHz Pentium with 16 megs we found the performance to be excellent.

In Internet discussion groups the most common complaint about this new version of Access is the sensation that you are wading through molasses as you navigate the Access interface. This complaint, of course, is as old as Windows itself. It results from the fact that state-of-the-art software requires state-of-the-art hardware and if you are using older hardware you most definitely will be disappointed with Access 95.

Developers especially need to take this hardware requirement into consideration. Your application may hum along nicely on your personally tuned-up Pentium machine but installed on your client's 386/486 mix of machines it could well be an embarrassment.

Getting Started

Access 95 makes it easy to get started. Click on File/New and you will be presented with a tabbed dialog box which allows you to start building your database from scratch by clicking on the Blank Database icon. If you click the Databases Tab you can select from any of 22 pre-built database applications covering many of the most common database tasks.

These pre-built applications include an Address Book, Contact Manager, Book, Music or Video Collection, Event Management, Membership Maintenance, Inventory Control, Order Entry, Ledger, Wine List, Asset Tracking, Resource Scheduling, Recipes, Donations, Household Inventory, Picture Library, Time and Billing, Students and Classes, Wine List, Workout and Service Call Management.

When you make your selection Access Wizards start working away and in a few minutes, after answering a few questions, you will have a complete database application including properly normalized data tables, menus, reports and mailing labels.

These Wizard-built applications can be studied as learning tools and freely customized to suit your needs.

Using Access with Visual Basic

If you are a Visual Basic programmer you will find Access to be the ultimate VB utility.

The Access .mdb file format is the native data file format for Visual Basic databases. We keep Access open in one window and Visual Basic in another. While programming we often switch from our VB session to the Access session so we can inspect the results of our latest SQL query or experiment.

Access also has a wonderful query design grid that makes it almost trivial to create complex queries. While in query design mode you can select View/SQL to open a text window of perfectly syntaxed SQL. This can be cut and pasted directly into your Visual Basic code, saved as a QueryDef or used as the Source of a Data Control.

The easiest way to learn SQL is to try to write it from memory, if it doesn't work switch to Access and build the query using the design grid and view the resultant SQL code to see where you went wrong.

Because of the massive overhead of Access we prefer to write our front ends using Visual Basic so that in a small application there may be just two files, an .exe file for the program and an .mdb for the data.

Who is Access 95 for?

Access for Windows 95 seems to be aimed at a pretty wide target: it is easy enough for the home user to build a hobby database and powerful enough to manage the data needs of a small business. Access is optimized for the Windows 95 environment on a Pentium class machine. No programming is required to build Access databases and can be ignored completely by the uninterested.

Common wisdom has it that Access is not a good solution where there will be 25 or more simultaneous users, but

(Continued on page 32)

ATECH COMPUTERS

3092 Cambie St. Vancouver, B.C. V5Z 2V9

Tel: 877-1812
877-1863
Fax: 877-2223

Tues. - Sun : 10:00am-6:00pm
Monday Close

intel inside pentium

Monthly Super Special

Designed for Microsoft® Windows™95

Microsoft Windows 95 Full version Preloaded

Pentium PCI/ISA Bus

P - 75	w/256K	$2296	P - 100	w/256K	$2496
P - 90	w/256K	$2396	P - 120	w/256K	$2696

* **Intel Pentium** CPU & Award BIOS
* **GIGA BYTE PCI Main Board**
* **8MB RAM (Up to 128MB) 72Pins**
* **850MB (Western Digital) Hard Drive**
* 3.5" (Epson) Floppy Drive 1.44MB
* Trident PCI 32 Bit Video Card 1MB (2MB Max.)
* **Enhanced** IDE PCI (On Board)
* **CD-ROM Drive Quad Speed 4x**
* **Sound Blaster (Vibra) 16 Bit & Speakers**
* **19" Tower Case w/ 230W P.S.**
* **14400 Fax Modem (Int.)**
* 101 Enhanced Keyboard
* **15" SVGA Monitor L/R, .28mm**
* **Microsoft Home Bundle CD Titles:**
* **MS** Encarta 95' Encyclopedia
* **MS** Works 3.0
* **MS** Money
* **MS** Golf
* **MS** Dangerous Creature
* **MS** Best of Entertainment Pack
* **MS** Scenes
* Mouse & Pad

PCI/ISA Bus (Basic)

P-75/90 w/256K..$1596/$1696
P-100 w/256K.....$1796
P-120 w/256K.....$1996

* Intel Pentium CPU & Award BIOS
* PCI Green Monther Board
* 8MB RAM (Up to 128MB) 72Pins
* **850MB** Hard Drive
* 3.5" Floppy Drive (1.44MB)
* PCI Video Card 1MB (2MB Max.)
* Enhanced PCI IDE (On Board)
* 19" Tower & CSA Power Supply 200W
* 14" Non-Int. L/R SVGA Monitor .28mm
* 101 Enhanced Keyboard
* Mouse & Pad

PCI/ISA Bus (Multimedia)

P-75/90 w/256K..$1896/$1996
P-100 w/256K.....$2096
P-120 w/256K.....$2296

* Intel Pentium CPU & Award BIOS
* PCI Green Mother Board
* 8MB RAM (Up to 128MB) 72Pins
* **850MB** Hard Drive
* 3.5" Floppy Drive (1.44MB)
* PCI Video Card 1MB (2MB Max.)
* Enhanced PCI IDE (On Board)
* **CD-ROM Drive (Quad Speed) 4X**
* **Sound Blaster 16 Bits & Speakers**
* 19" Tower & CSA Power/200W
* 14" Non-Int. L/R SVGA Monitor .28mm
* 101 Enhanced Keyboard
* Mouse & Pad

Special!!

WESTERN DIGITAL
HARD DISK
1.20GB $399
1.08GB $349
850MB $289

HEWLETT® PACKARD
HP 5L $679.00
HP 660C $549.00

Canon
BJC - 4000 Color Printer
$389.00

Panasonic
4X CD ROM Drive
$189.00

Fax/Modem
14.4 KB V.32 Internal
$69
28.8 KB V.34 Internal
$189

Two Years Parts & Labour Warranty For Basic Systems *Price Subject To Change Without Notice.*

MICROSEA
System Corp.
美高善電腦系統

110-4940 No. 3 Road
Richmond, B.C. V6X 3A5
Alderbridge Place
Tel: (604) 273-9233
Fax: (604) 273-9203

私人及商用電腦
售後服務
保證滿意

Standard Pentium Computer System:

- Intel-Triton Chipset 75-166MHz PCI/ISA Mainboard
  Intel P5 CPU with Cooling fan
  Built-in PCI/IDE & Fast I/O Controller
  256K Cache on Board
- **8MB** 72pin SIMM (Option: **EDO RAM**)
- Panasonic 1.44 (3.5") Floppy Drive
- Quantum **850MB** EIDE Hard Drive
- PCI VGA Display w/1M Accelerator
- Mid Tower Case w/CSA Power Supply
- Enhanced 101 Keyboard (Chinese/US)
- Acer View 14" .28mm NI VGA Monitor
- Microsoft Serial Mouse w/Mouse Pad
- Windows 95 (Diskette/CD) Full Version

(Choose Pipline Burst Cache add $50)

FREE Joystick

P5-75 .... $1,788 **P5-120 .... $2,088**
P5-90 .... $1,888 **P5-133 .... $2,288**
P5-100 .... $1,988 **P5-150 .... $2,388**

Chinese New Years' Specials!!

Cardinal 28.8 Ext. Fax/Modem	$219
US Robotics 28.8 Ext. Fax/Modem	$269
MOTOROLA Power Series 28.8 Ext.	$339
Diamond ST-64 Video 2M VRam VESA	$199
Epson Stylus IIS Color Jet Printer	$389

Limited Quantity!! Please don't miss!!!

Multimedia Special

- Panasonic 4X / Acer 6X CD-ROM
- Sound Blaster 16 + Amplified Speakers
- CD Bundle: MS Encarta 95, MS Works & Money, Hanna Barbara Sound Bit & CD Sample

4X at $299 6X at $369

Hard Drive Specials

Western Digital 635MB	$239
WD/Quantum 850MB	$259
WD/Quantum 1.0GB	$309
WD/Quantum 1.2GB	$359

* Contract Service: System Maintenance, Network Service, Programming, POS
* Government & Corporate Purchase Orders Are Welcome
* Mail Order & Fax Order Are Accepted

Sales • Service • Repairs • Upgrade • Networking • Software

WE OFFER YOU TOTAL SOLUTIONS & AFTER SALES SERVICES!

(Continued from page 31)

in less demanding environments Access is an excellent solution. The new Jet database engine which Access uses is much more robust than previous versions and appears to have better data integrity.

Access is a very good choice for people interested in database development but relatively new to the field. It shares the visual motif of modern Windows development tools and supports the Microsoft Visual Basic for Applications programming language. This language is a good introduction to computer programming in general and has the added advantage of being built into other Microsoft Office applications.

The Competition

Windows database products are relatively new. They were the last of the major applications to be ported to the Windows environment and have only recently begun to fully utilize the event-driven model.

Three products appear to be emerging in the desktop database market. At one end there is **Borland's Delphi** and at the other end there is **IBM's Lotus Approach** with **Microsoft's Access** somewhere in the middle.

Borland Delphi is not strictly a database program but it is a fabulous Windows development tool with very extensive database capabilities. It includes the **Borland Database Engine** which is the same engine underlying **Paradox** 7. Delphi allows you to create blindingly fast Windows applications and full-scale client/server applications but all this power comes at the price of a much steeper learning curve.

Lotus Approach on the other hand is generally considered to be the champion in the ease of use category. It is really one of those programs you don't have to open the manual to use. It lacks the flexibility of Access and, at least in the current version, offers little opportunity to dig deeper into the Secrets of the Database Masters. We have heard that the Windows 95 upgrade will contain a Visual Basic-like programming language for those who want to delve but we haven't seen this yet.

Access provides a combination of ease of use and a depth of power. It is a program you can grow with and if you like this sort of thing it will grow on you. ❑

About the author: ***John Hamm*** *is a consultant and database application developer at Eastside DataGraphics, 1458 Commercial Drive, Vancouver, B.C. V5L 3X9 Tel: 255-9559, E-mail: John_Hamm@MindLink.bc.ca*

ASAP does a lot with less

By Alan Zisman

Product: ASAP
Publisher: Software Publishing Company
P.O. Box 54983
Santa Clara, CA
95056-0983 USA

Computers get more powerful— software adds more features— users get more confused— software adds more features to make it easier for users, requiring more powerful hardware, allowing software to add more...

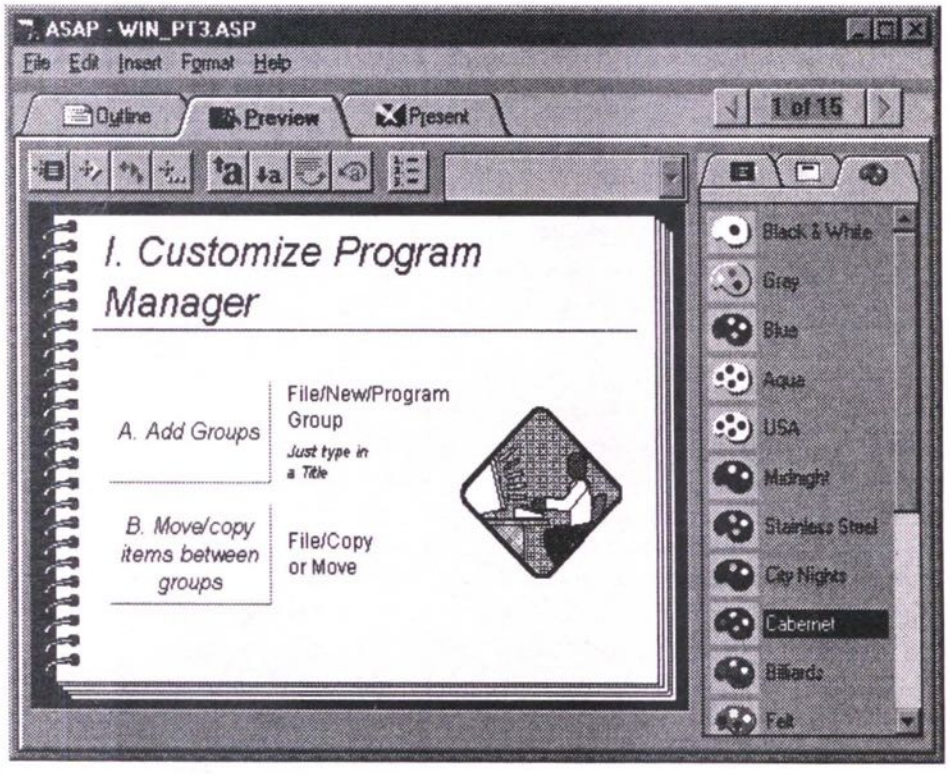
Sound familiar? Are you really using all the advanced features of your word processor, spreadsheet, page layout or presentation software? Maybe yes— but if most of us are honest, we use the advanced features of these sophisticated products about as often as we drive at 180 km/h.

One such product that helps buck the trend is Software Publishing's ASAP. It's from a company whose Harvard Graphics defined the field of presentation graphics, beginning a decade ago. But trying to do any kind of graphics in the non-graphical DOS environment was inherently complicated. Newer products for the Mac and Windows environments stole away much of the market... and took advantage of the relative ease of working in these graphical environments to add features and complexity.

Fancy dissolves between slides, integrated sound and video, complex backgrounds... all marks of a classy presentation require fancy hardware. The last couple of presentations I made using Lotus Freelance resulted in 4 MB data files— I can't simply copy those onto a floppy disk, put it into my pocket, and waltz in to give my speech.

But many, if not most presentations accompany speeches that are written or modified at the last possible moment— and the presentation graphics need to be created as soon as possible. Hence ASAP... no multimedia hooks, just an attractive presentation, that can be created in a few moments, from an outline from your word processor.

ASAP, in fact, adds itself as a toolbar button to Word... write an outline of your speech, click the button, and the outline becomes the text of your presentation. Select one of 17 colour schemes and your choice of 13 overall designs, then leaf through the slides, picking the most



effective of 22 formats for your individual slides. Slides can look like organizational charts, agendas, graphs, tables or more. Finally, if you want, add a logo or a few enhancements— you can be done in 15 minutes or so.

This minimalist program comes on a mere two floppy disks, with no manual— just a tiny Getting Started Guide, and a 20 page "Guide for Compelling Presentations". The data file I created with it, following up on a pair of Lotus Freelance behemoths weighed in at a svelte 160kb. Requiring a humble 3.5 megs of drive space and 1 MB of RAM, it will run happily on a older Windows 386 or under-powered laptop... and will be positively perky on any more modern, more powerful machine. It doesn't try to recreate the wheel— it makes use of the clipart manager and wordart that Microsoft ships with virtually all of their applications, or can use other standard clipart formats. (It does, however, come with yet another spell checker).

It doesn't do everything... in many cases, it doesn't try to do everything. However, I couldn't add a title slide, after the fact— I simply couldn't find a way to insert a page at the beginning. It's awkward to try to move pages around— there's no thumbnail view, like in its more full-featured competitors. I miss being able to print handouts with 6 of my slides to a page, like I can in Freelance. But it does what it claims to do— and generally quite well.

No Wizards, no bundled clipart or fonts... just an effective program that you can probably be up and running with in half and hour or so. It lists for under a hundred, US dollars... and you can buy it locally for about CDN$149.

Put it on your laptop, and use it for all those times you need a presentation right now. When you've got a month lead time, let the art department make you something fancier, using all those other sleeker power-software products. If you're still not convinced, Software Publishing is prepared to let you try a free trial version that does everything that the full product does— but only for a couple of weeks. You can download this 2 MB file from CompuServe (GO SPCONLINE), AOL (keyword SPC), or on the Internet (http://www.spco.com).❑

About the author: *Alan Zisman is a teacher and an associate editor of Computer Player, he can be reached by e-mail alan_zisman@computer-player.com*

N & K COMPUTER LTD.

AMD 486DX4-100	$1295
AMD 486DX4-120	$1315
Triton-PENTIUM 75	$1475
Triton-PENTIUM 90	$1585
Triton-PENTIUM 100	$1645
Triton-PENTIUM 120	$1725
Triton-PENTIUM 133	$1945

PCI motherboard w/256K
(Pentium system w/INTEL-Triton chipset)
8 MB RAM (72pin, 70ns)
850 MB EIDE Hard Drive
1.44 MB Floppy Drive
Onboard EIDE controller w/16550 UART
64-bit PCI SVGA card w/1MB
19" Tower case w/230 watt PS
14" SVGA monitor .28dpi N.I. L/R
BTC Windows 95 Keyboard
Mouse & CPU cooling fan

System Options

256K Pipeline Burst (Pentium only) .....+$55
16MB RAM (72pin, 70ns).....+$275
8/16 MB EDO (Pentium only) ..... +$45/+$335
1.0GB Hard Drive.....+$45
1.2GB Hard Drive.....+$90
1.6GB Hard Drive.....+$135
24" Tower case w/230watt PS..... .+$50
15"SVGA monitor .28dpi N.I. L/R.....+$135
14.4 Int. FAX Modem ..... +$55
28.8 Int. FAX Modem ..... +$165
2X CD-ROM Bundle.....+$180
4X CD-ROM Bundle.....+$250
6X CD-ROM Bundle.....+$310

#207-4968 Victoria Drive
(Near 34th Ave.)
Vancouver, B.C. V5P 3T7
Tel/Fax 325-9258
Open M-F 10:30-6 Sat. 11-5, Closed Holiday

MONTHLY SPECIALS

72pin 70ns SIMM
4 MB $148 8 MB $288
NEC 1.6 GB Hard Drive
$419
CANNON BJC - 210
$359
Upgrade & Unlisted items.
CALL or COME

SYSTEM SPECIAL

AMD DX2-80 w/8 MB & CD
Only $1359

PCI motherboard w/256K
8MB RAM (72 PIN, 70NS)
540 MB EIDE Hard Drive
1.44 MB Floppy Drive
Onboard EIDE controller w/16550 UART
Trident 9440 32-bit PCI SVGA card
19" Tower case w/230 watt PS
14" SVGA monitor .28dpi N.I. L/R
BTC Windows 95 Keyboard
Mouse & CPU cooling fan
2X CD-ROM Bundle
(System Options is not for this Special)

CD-ROM BUNDLE

SoundBlaster 16 OEM,
CD-Drive, Shielded Speakers (20w)
2X $195 4X $265 6X $325

All systems have a 48 hour burn-in test,
2 yr. parts & labour warranty.
Prices subject to change without notice.

Business owners!

If you operate a business and own a computer, you can now take advantage of this powerful program to handle your payroll.

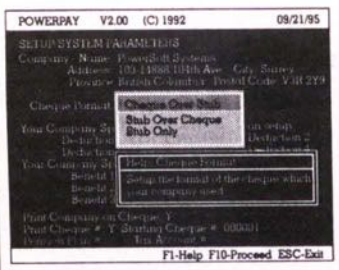
POWERPAY

The Ultimate Payroll Program

Learn to operate in 30 minutes or less!
* Simple Key Strokes
* Menu-driven Selections
* Form Data Entries
* Help Is Just One Key Stroke Away

Flexible
* Chooses pay period and pay method individually for each employee

Powerful
* Captures pertinent information for summary reports



Windows version coming soon!

$89 Call for a dealer near you.

PowerSoft Systems Ltd.

Vancouver Office
103-14888 104th Ave.
Surrey, B.C.
Canada V3R 1M4
Phone: (604) 582-7488
Fax: (604) 582-7399

Toronto Office
3-44 East Beaver Creek Rd.
Richmond Hill, Ontartio,
Canada L4B 1G8
Phone: (905) 886-1688
Fax: (905) 886-2650

Key Features:

Pay periods
* Weekly, Monthly, etc.

Pay methods
* Monthly Salary, Hourly Pay, Commission

Reports
* Revenue Canada Remittance
* Monthly Employee Summary etc.

Benefits and Deductions
* Six Benefits (Four Customized)
* Nine Deductions (Six Customized)
* GST Support, etc.

Other
* Advance Cheque Handling
* Posts Data On-Line
* T4 Production

System Requirements:
512K memory, DOS 2.0 or higher, hard disk, 5.25" or 3.5" floppy drive, color or mono-chrome monitor. Runs on IBM and 100% compatible. Supports all popular printers.

VARSITY COMPUTERS

Serving Vancouver Since '87

Monitor Repair
- Free estimates in shop
- Drive-in service - full time technician on staff
- Pick-up & delivery available
- Repair most major brands
- Loaner available at low rates
- Service you can trust

Hard Drive Specials
- 530MB $280 installed
- 850MB $320 installed
- 1.2GB $380 installed
- Simple Data Transfer included

Memory Specials
- $40 per MB installed

Medical Manager Billing Package

Complete Hardware &Software Rental for
Only $69 per month

3737 West 10th Ave. Vancouver B.C. (10th Ave. & Alma)
Phone (604) 222-2326, 222-2355 Fax (604) 222-2372

CD ROM Titles

EDUCATIONAL

Art History Encyclopedia
Botanical Encyclopedia
Chinese Common Idioms
Chinese Cookbook
Chinese Text Reader
Digital Gourmet
Educational Overload
Edumedia(Sounds)
Electronic Bookshelf
Holy Bible(King James Ver)
Home & Business Legal Adv.
Interactive Chinese
Kid's Coloring Wonderland
Mini Story Time
Philatelic Encyclopedia
Preschool Edutainment
S.A.T. Survival Kit
Secret Subjects
Traveler's Handbook
World of Education

ENTERTAINMENT

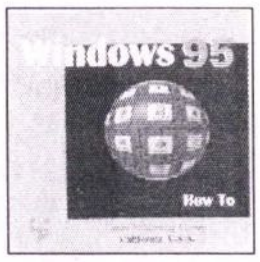
100 New Dos Games
3-d Manai Games
3-D Mega Games
350 Games Disc
49er Windows Games
50 Window's Games Vol.1
50 Window's Games Vol.2
50 Window's Games Vol.3
50 Window's Games Vol.4
50 Winodw's Games Vol.5
All You Can Play
Doom Expert
Family Fun
Games Galore
Killer Games Collection
LasVega Casino Games
Power Stick Games
Puzzle 5000
Sim City 1.0
Window's 51 Games
World's Greatest Game Disk

GRAPHICS

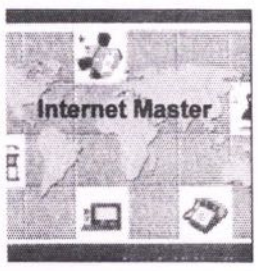
3000 True Type Fonts
Animation Tour
ANSI-mania
Clipart Library
Desktop Publisher's Dream
Designer Clipart Vol.1
Designer Clipart Vol.2
Designer Clipart Vol.3
Designer Clipart Vol.4
Designer Clipart Vol.5
Fabulous Photos
Fractal Art Gallery Vol.1
Fractal Art Gallery Vol.2
Graphic's PRO-SHOP
ICON Library
Image Library I
Image Library II
Image Library III
Multimedia Toolkit
Perfect Pictures
Travel To Space

MISCELLANEOUS

50 Window's Applications
Bugs Bunny Cartoons
Business Library
"C" Developer's Toolkit
Championship Wrestling #1
China Traveler Sampler
Complex LINUX (Winter 95)
Compu-Fix
HAM Toolkit
INTERNET Toolkit
Massive MIDI Collection
MIDI and WAV Workshop
Music Toolbox
OS/2 Collection
Sound library II
Super Shareware Collection
Top 101 Multimedia
Utilities GOLD Collection
Window's At It's Best
Window's Programs



Windows 95 How To
It shows users how to unlock the power of the MS operation system of the future and become Windows 95 literate. Preview and learn about Windows 95 before buying it.



Internet Master
A comprehensive reference source covering Internet Dictionary, Reference, FAQ, Internet How-to, Web pages of Internet resources, lets you access Internet, get free hours to try.

Web Pages for Education
Over 2000 actual WWW pages provide you all educational information for K-12 teachers, college & university faculty, parents, students, and lifelong learners.

Web Pages for Computer & Software
It provides users a database of the Hottest new Web sites of Archives, Companies, PCs, Graphics, Hardware, Literature, Network, Programming. Unix, Multimedia, etc.

Some gift ideas:

Math Master
This 5-in1 reference source CD covering Algebra, Trigonometry, Geometry, Calculus, Statistics is a complete reference books for high school students or college freshmen.

Visual Chinese Cookbook
Three hour of video clips will guide you step by step in the preparation of 24 dishes. You will be amazed at how fast you can learn to cook Chinese food with little cost.

* Textures Pro vol. 1
* Textures Pro vol. 2
* The history of Painting
* 60 Best Casino Games
* 1000 Year Potala
* 100 Chinese Poems

Buy 5 get one FREE

$17.99 each plus tax & SH

BMP Publishing Ltd.

To order call (604) 739-6588

7 days Money Back Guaranteed!

HP Selects Cable Modem OS

Hewlett-Packard Co. says it has selected Wind River Systems' VxWorks real-time operating system for use in its recently announced QuickBurst cable modem. The deal's terms weren't disclosed.

QuickBurst will offer users access to the same online services as a conventional telephone modem — only thousands of times faster — by connecting a PC to a standard coaxial cable TV line. The device will be sold to cable TV operators who will then offer it to their subscribers.

VxWorks will be the embedded operating system for controlling the HP QuickBurst's internal modem operations, including protocol, network management and other services. Wind River Systems, based in Alameda, California, specializes in software for developing real-time embedded applications.

"Wind River is well known in the embedded systems industry for its scalable operating system and excellent development- tool support," says William R. Hahn, operations manager for HP's interactive broadband products operation. "In the highly competitive multimedia area, where fast time-to-market is critical to success, their leading-edge technology and engineering savvy will enable us to meet our stringent design, cost and availability requirements."

Amiga OS Headed to TV Land

The Amiga operating system will live again, but not inside a desktop computer.

Viscorp., an interactive TV developer headquartered in Chicago, and Escom AG, a computer manufacturer headquartered in Bersheim, Germany, have finalized a licensing agreement to add the Amiga operating system to Viscorp's new set-top TV appliance — Electronic Device (ED).

The deal's terms weren't disclosed. In 1995, Escom AG acquired all Commodore and Amiga licenses, patents and trademarks.

Viscorp says that adding the Amiga operating system to ED will allow users to access any online service, local bulletin board service and any address on the Internet at speeds thousands of times faster than a conventional telephone modem. Access will be allowed through a TV remote control, a computer keyboard,

a touch-sensitive pen or the microphone that's into ED.

"By utilizing our unique set-top appliance and incorporating the Amiga technology, Viscorp is able to provide ... the ability to access the Internet through a standard TV set with pricing that makes sense for the average TV viewer," says Jerome Greenberg, Viscorp's chairman.

Computer Player

DELIVERED

We will deliver
25 or more copies of
Computer Player for free
to your office or organization.
For more information please call
(604) 739-8266
or fax: (604) 739-3589

TANGENT COMPUTERS
天鈞電腦公司

Tangent Special
Pentium 75 System
for $2538

Why settle for clones?

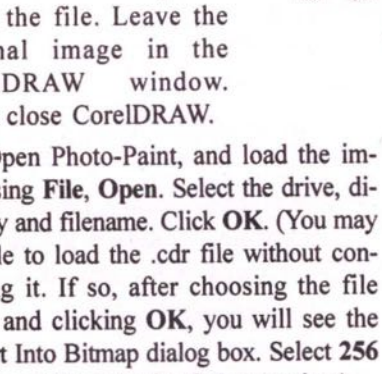
Please call for latest price

購買IBM良機

Buy IBM Aptiva™

◆ Features: Intel Pentium 75-133 MHz

1. 8/16MB RAM Expandable to 128MB
2. 1.0/1.6 GB HD
3. 28.8K Voice Fax Modem
4. Communications Centre
5. MPEG Video Card
6. 4X CD-ROM
7. 14"/15"/17" IBM Monitor
8. Lots of Software



IBM Business Partner
Retailer

intel inside pentium

- Standard 3 Year Express Exchange Warranty
- Reliability and Quality You Can Trust
- Easy to Learn and Use for All Humanbeings.

◆ Features Depends on Models
◆ 1 Year Warrenty on Monitor, Keyboard, Mouse, Speakers

- ASUS Pentium **Triton** Main Board
- 8MB RAM
- 1.0 GB HD
- 1MB PCI **64 Bit** SVGA Card
- SB 16 Vibra Sound Card
- Toshiba 4 Speed CD-Rom, Speaker
- 15" NI L/R SVGA Korean Monitor
- 15" Case/230 Watt PS
- Logitech Mouse/Pad
- Windows 95 Preloaded
- 1996 Encyclopedia CD Bundle
- 2 Years Parts and Labour Warranty

Quality & Service is our Name!

Free Delivery in Vancouver, Burnaby and Richmond Area!

1996年優待期間凡購買IBM® Aptiva,™ 另贈送 4小時課程 (For Aptiva Systems Only)

NEC
HEWLETT PACKARD Authorized dealer
Canon Authorized dealer

IBM and Aptiva are registered trademarks of the International Business Machine Corporation (Price subject to change without notice!)

2221 West Broadway, Vancouver, B.C. V6K 2E4 (Free underground parking)
Business hours: Tue.-Sat. 10:00am-6:00pm, Sun: 12:00am-6:00pm; Mon.: Closed

Tel: (604) 737-9918 Fax: (604) 737-9928

Desktop Publishing Tips:

Corel Photo-Paint 5.0

By Swee-Sim Tan

We're going to use CorelDRAW and Photo-Paint to create a transparent drop shadow effect.

First, open CorelDRAW. Create a line art image in black and white, for example, a line of text.

Save this image, then convert it to a TIFF bitmap format using **File, Export**. For **Colors**, select **256 Shades of Gray**. Choose a drive and directory and name the file. Leave the original image in the CorelDRAW window. Don't close CorelDRAW.

Open Photo-Paint, and load the image using **File, Open**. Select the drive, directory and filename. Click **OK**. (You may be able to load the .cdr file without converting it. If so, after choosing the file name and clicking **OK**, you will see the Import Into Bitmap dialog box. Select **256 shades of Gray** in the **Colors** option.)

Display the Fill roll-up. Click the Uniform colour button and select a middle gray colour. Select the Fill tool and click in the black areas of the image so they are changed to gray. This image will become the drop shadow.

Click **Effects, Fancy, Gaussian Blur**. Choose a **Radius** value—try 15. Click **Preview** to check the effect and change the radius if you wish. When ready, click **OK**.

Click **Image, Convert To, Black and White, Screen Halftone**. Save this again as a TIFF file. The image must be a monochrome bitmap so that CorelDRAW will treat it as transparent (gray-scale does not work).

Activate the CorelDRAW window and load this file into the original CorelDRAW file using **File, Import**. Size and arrange the original image with the TIFF image behind as a shadow. Click **Arrange, Order** to move the objects **Forward** or **Back**.

Colour the original object. Colour the TIFF image by selecting an outline colour (click the right mouse button on a colour in the colour palette). Its fill should be set to **No Fill** (click the left mouse button on the **X** in the colour palette).

Create a coloured or textured background behind both images. The background will show under the shadow.❑

About the author: *Swee-Sim Tan is a freelance graphic artist and desktop publisher who provides training and consultation in CorelDRAW, Corel PHOTO-PAINT, Corel VENTURA, Harvard Graphics, PageMaker, and WordPerfect. If you are using CorelDRAW, Corel PHOTO-PAINT, CorelTRACE, or Corel VENTURA, call for information about purchasing How-To booklets and a collection of desktop publishing tips. Telephone: (604) 254-5940.*

IDE HARD DRIVES 3 Year Warranty

Seagate

ST-3630A	630MB/14ms/128K	$ 259
ST-51080A	1.1GB/11ms/128K	$ 319
ST-31270A	1.3GB/10ms/256K	$ 369
ST-31640A	1.6GB/10ms/256K	$ 499
ST-32140A	2.1GB/10ms/256K	$ 579

WOW! Maxtor®
It's True, Less than 25 Cents Per MB !
71626A 1.6GB/12ms/128K
Only: $ 399

Quantum

FB 850A	850MB/14ms/128K	$ 269
TB 1280A	1.3GB/11ms/128K	$ 369

WESTERN DIGITAL

AC 2635	635MB/10ms/64K	$ 259
AC 2850	850MB/10ms/64K	$ 289
AC 21000	1.1GB/10ms/128K	$ 319
AC 31200	1.3GB/10ms/64K	$ 429
AC 31600	1.6GB/10ms/128K	$ 499

PROMISE 2300+ EIDE CONTROLLER $ 99

CD-ROMS

Sony CDU-55E	300KBs/250ms/256K/IDE	$ 99
Sony CDU-77E	600KBs/220ms/256K/IDE	$ 179
Hitachi 7730	600KBs/240ms/128K/IDE	$ 169
Panasonic CR-581	600KBs/220ms/128K/IDE	$ 179
NEC 4X4 (4X 4 Disc)	600KBs/250ms/128K/IDE	$ 419
Creative 6X IDE	900KBs/220ms/256K/IDE	$ 269
Pioneer DRU-124XS	676KBs/150ms/128K/SCSI	$ 259
Sanyo CDR-254SH	600KBs/190ms/128K/SCSI	$ 249
Nakamichi MBR-7	300KBs/2X - 7 Disc /SCSI	$ 399
Nakamichi 4X	600KBs/4X - 7 Disc/SCSI	$ 599
NEC Omni 4X	4X CD-Rom & 5 Titles/SCSI	$ 369

RENO
Portable CD-ROM
2X Compact -190ms
MAC & PC Drivers
SCSI - 2
$ 169

MICRO DRIVES CANADA
"Canada's Storage Experts"
Micro Drives Canada Inc.
2115-13560 Maycrest Way
Richmond, BC
V6V 2J7

(604) 244-3737 Phone
(604) 244-3738 Fax
1-800-21-MICRO Out of Town

Zad-All-Win
Saves You Money,
Protects Our Fragile Environment,
Gives Disabled Persons Work.

Remanufacture your toner and laser cartridges.
All fabric ribbons reloaded / re- inked at less than half the cost of new ones.
We also remanufacture all types of inkjets and bubble jets.

100% Guaranteed

Zadall Systems Group and All-Win Workshops are pleased to announce...

Zad-All-Win

Together with the strengths of both companies, we are able to provide environmentally-friendly business products at noticeable cost savings to the customer.

Check out our unbeatable prices. Some examples are: HP III / II cartridges w/exch $39.99 each, HP III P / II P cartridges w/exch $49.99 each, HP IV cartridge w/exch $75.00, Canon FX 1 cartridge w/exch $59.99. Call for pricing on our IBM series cartridges and all fabric Ribbons.

In combining with Zadall, All-Win will be in a position to offer more opportunities to persons with disabilities. Showing what a great job these persons who face each day as a new challenge, can do.

Phone or Fax:
(604) 272-9921 or
1-800-811-2888

Fujitsu Tests Employees' English

Saying it is gearing up for the Internet age, Japanese computer giant Fujitsu Ltd. is set to test 30,000 of its 50,000 employees on their English ability, and not even Fujitsu President Tadashi Sekizawa will escape the testing.

Also, thousands are to be sent for courses to improve their knowledge of what the Agence France-Press International News Service says "is increasingly becoming the global language."

A Fujitsu official told the Nihon Keizai business daily, "In the future, proficiency in English will be added to our rating standards."

The French wire service says Sekizawa and some 30,000 of his employees will start taking the Test of English for International Communication exams in mid-February. The firm also will send 3,500 selected employees for a course in English, which most Japanese find difficult to crack despite its status as the first foreign language for students.

"Japanese struggle because the pronunciation and syntax is completely different from their own language," AFP comments. "L and R are particularly difficult letters and students complain they have a constant struggle telling the difference."

However, Sekizawa said the widespread use of the Internet means the company now could easily gather information abroad and conduct negotiations with business partners "if we have good knowledge of English."

AFP says the number of Net users in Japan rapidly has reached 3 million, but difficulty in mastering English has been cited as one of the reasons for the limited Internet input from Japanese users.

Does Java Violate Prodigy Patents?

Sun Microsystems Inc. may have to pay millions in licensing fees if its much-heralded Java Internet programming tool is found to infringe upon a Prodigy Services Co. patent, reports Interactive Daily.

If Prodigy's claim holds, it may "mean that anyone who attempts to make, use or sell Java runs afoul of (Prodigy's) patent," Robert Kost, a former counsel at Prodigy and the current vice president of U.S. Interactive, told the trade publication.

The news also could substantially boost Prodigy's asking price, two former Prodigy officials told Interactive Daily. Rumors are ripe that IBM and Sears are considering selling the online service.

Representatives for Prodigy and Sun Microsystems declined to comment.

Compaq Ends Protest Against Intel

Ending a protest that flared in 1994, Compaq Computer Corp. has decided to rejoin Intel Corp.'s "Intel Inside" marketing campaign, part of a broad patent cross-licensing deal reached last week by the companies. Financial terms were not disclosed.

The companies' patent agreement allows them to freely share technology advances.

AP notes that while Compaq is the largest customer of Intel's microprocessors, the firm dropped out of the "Intel Inside" promotion in 1994 and Compaq CEO Eckhard Pfeiffer publicly criticized the promotion for causing customers to think that any PC with an Intel chip is like another.

Net Interests Drive Market

A computer magazine reports its latest reader survey suggests a driving force behind the sales of computers, peripherals, and software is an interest in accessing the Internet.

CMP's NetGuide, which focuses on online activities, also says it has learned more than half of its subscribers — 98 percent of whom are expert, advanced, or intermediate computer users — say they will spend nearly $8,000 on computer equipment and software this year.

"The people who are using the net, the savviest users, are not only driving the online revolution, they're also emerging as the driving force behind the entire PC industry," says NetGuide publisher Beth Haggerty in a statement from Manhasset, New York.

The research, conducted by Simmons Research, found 54 percent of NetGuide's subscribers plan to buy a new computer in 1996, spending an average of $3,260 on a new PC, $3,513 on peripherals (such as CD-ROM drives, speakers, monitors, printers, modems, and storage devices) and another $1,109 on software.

The poll also found the magazine's average subscriber:

- Has been using computers for an average of 9.6 years at home and 9.7 years at work.
- Owns an average of 2.6 computers at home.
- Spends, each week, on average 17.8 hours online, including 9.4 hours at home and another 8.4 hours at work.

Also, 10 percent of the readers have their own home pages on the Internet's World Wide Web and 50 percent work at companies that have a Web site running or in planning or development.

Creative Computer Systems

102-1965 West 4th Ave., Vancouver, B.C.

Tel: (604) 732-6313
Fax (604) 732-8337

Creative Pentium Multimedia Package

Two years Parts and Labor warranty

System

- Intel Pentium Processor
- 8 MB 72 pin SIMM RAM
- Intel Triton Chipset
- 850 MB Hard Drive
- 3.5" 1.44 Floppy Drive
- On-board PCI IDE Controller with high speed serial & parallel parts
- 1 MB PCI SVGA Video Card
- 14" 1024 x 768 N/I L/R 0.28 Color Monitor
- 101 Keyboard
- Mouse & Mouse-pad

Multimedia

- 2x CD-ROM Drive
- 16bit Sound Card
- Stereo Speakers

Fax / Modem

- 14.4 Fax / Data / Voice Modem

P-75	P-100	P-120	P-133
$1751 $64/month*	$1917 $70/month*	$2027 $74/month*	$2280 $83/month*

* OAC based on 36 months business lease, first and last payments in advance with option to purchase at 10% at end of lease period.

Option: Upgrade to 4x CD-ROM Drive Add $100
Upgrade to 28.8 FAX / DATA Modem Add $100

CREATIVE SPECIAL

Canon Color Printer BJC-4000
$389

Maxtor Hard Drive
850 MB $265

USR 28.8 V.34 FAX/MODEM
$258

Zoltrix 14.4 FAX/MODEM/VOICE
$79

2X/4X CD-ROM Bundle
2X/4X CD-ROM Drive
16-bit Sound Card
Stereo Speakers
$149 / $249

Are you looking for
COMPUTER BOOKS about

Enrich Your CD-ROM Titles

CD-ROM Bundles (10 Titles)	~~$39.99~~ $31.99
CD-PAK for Window 95 (6 Titles)	~~$42.99~~ $34.39
CD Title	~~$17.99~~ $14.39

Welcome to Creative Computer Systems. We sell *BOOKS*, too. All 20% off

Many Other Special Offer Items
Please Call us for price!

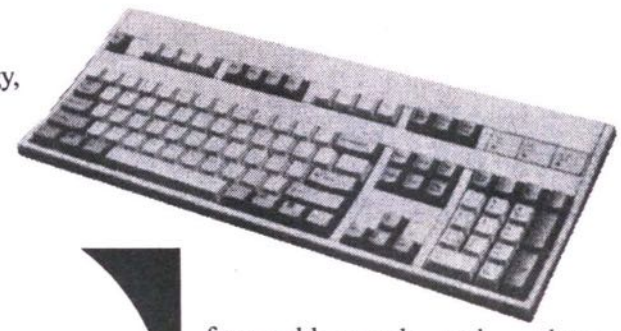
Store Hours:

Mon. - Fri.	9:30am - 6:30pm
Sat.	10:00am - 5:00pm
Sun.	Closed

Prices Suject To Change Without Prior Notice
All brand names and trademarks are the property of their respective owners.

Fujitsu keyboard for Windows 95

By David Anderson



The Fujitsu FKB8725 keyboard is another entry into the world of Windows 95-ready input devices now appearing in computer stores. This is a well-made unit with the standard 101-key format, inverted-T cursor keys, function keys along the top edge, and trim, space-saving side pieces. The feel of the keys is firm, springy, and quiet, with no click or "tactile enhancement". The keyboard sits on four rubber pads, and there are fold-out elevators where you would expect to find them.

There are three Windows 95 keys added to the standard compliment of keys on a qwerty-type AT keyboard. There are two Start Menu keys on either end of the space bar, in between the Control and the Alt keys. These keys give instant access to the Start menu at any time, and make mouseless exits from Windows very easy. To get to the Shut Down options, just press The Start Menu key, then the letter "U". The next three choices are Enter to quit, "R" to restart, or "M" to restart in DOS mode. The other Windows 95 key sits in between the right Start menu key and the right Control key. Normally, this key opens the Open-Explore-SendTo-Properties menu of any highlighted folder. It opens the Run menu for any highlighted executable file. At other times, this key opens the "What's this?" window. Most often, this key would be used to get to the Properties sheet for any given file or folder or drive.

In general, this keyboard does everything a keyboard needs to do in terms of a solid feel and quiet operation. The Windows 95-specific keys do indeed save time and effort, particularly with exiting Windows or switching to DOS. There is nothing trendy or "ergonomic" about this unit—it is straightforward and traditional. For the price, this is a sensible replacement for a tired, worn-out keyboard, especially if the operating system is Windows 95. ❑

About the author: *David Anderson is Vancouver elementary teacher, parent of two children. He can be reached by e-mail: computer_player@mindlink.bc.ca*

VANCOUVER FILM SCHOOL 1996

PART-TIME CLASSES

MULTIMEDIA
- Introduction to Alias/Wavefront Power Animator v.6.0 Level 1
- Introduction to CD-ROM Authoring
- Introduction to 2D and 3D Computer Animation
- Introduction to MIDI
- Computer Paint/Fractal Painter plus Photoshop

INTERNET TRAINING
- Internet Training for General and Specific Users
- Overview of HTML Publishing for Mac & PC Users
- HTML Publishing Level II for Mac & PC Users
- Graphics On The Internet: One-day Workshop
- Searching The Internet: One-day Workshop

ANIMATION
- Classical Animation: Art & Technique
- Foundation Drawing Skills
- Life Drawing Skills

WORKSHOPS
- Using Movie Magic: A Workshop
- AVID Workshop: Introduction to Media Composer
- AVID Workshop: Media Composer Tips & Techniques
- AVID Workshop: Media Composer for Producers
- AVID Workshop: Introduction to Media Suite Pro

Alias/Wavefront
Power Animator Course
at
VANCOUVER FILM SCHOOL
Alias/Wavefront, the world's leading special effects software company, has designated Vancouver Film School an official Alias/Wavefront training centre to meet the global demand for computer animators skilled in Alias/Wavefront software applications. Within this partnership a high-end computer animation program has been created that delivers more access to SGI platforms (360 hours); the best possible workstation/student ratio (1:1), in a stunning production environment, at a cost without rival ($16.60 per hour).
HARD TO BELIEVE? CALL. COMPARE. NOTHING DOES.

INFORMATION SEMINARS
To attend a free information seminar on Film Production, Multimedia, 3D Animation, Alias, Classical Animation, or Acting for Film & Television, call: 685-5808 (for seminar information only.)

FULL-TIME PROGRAMS
VFS Offers Intensive, 1 Year Immersion Programs
VFS offers one-year intensive production programs that are equivalent or superior to the best post-graduate programs in North America. The difference is our programs take less time...a lot less. Full-time Direct Education programs in:
Film Production, Multimedia, 3D Animation & Digital Effects, Classical Animation, Acting for Film & Television.

Visit Vancouver Film School's Web Site: http://www.multimedia.edu

FINANCIAL ASSISTANCE AVAILABLE

Vancouver Film School
#400 – 1168 Hamilton Street,
Vancouver, British Columbia
Canada V6B 2S2

E-mail: parttime@multimedia.edu
Call: 685-8689

Computer Player
For advertising information, please call (604) 739-8266

By Alan Zisman

Brother's ImageCenter and Willowbrook's E-Z Office:

Two affordable all-in-one solutions for home and small offices

Paper glut. If you're like most people working in an office-con text, you're probably drowning in a sea of paper... paper you produce, paper you receive. Lots of it probably goes straight to the trash (or preferably, the recycle bin), but that still leaves lots that you need to keep, and file, and hope you'll be able to find when you need it.

The computer press, creators of many buzz-words, has been predicting that computers would result in a 'paperless office'... but instead, it seems that computerized offices, if anything, produce more paper documents than previously. Twenty years ago, pre-computer and pre-photocopiers, offices often circulated memos— a single copy that made its way around the office, with each reader initialing it.

Now, with photocopiers common, everyone gets a copy. Or with computer databases and mail merge, everyone can get a customized copy ("Alan Zisman— you may already have won 10 million dollars!").

Some big businesses have begun steps to take control of the deluge of paper. A few years ago, for example, VanCity Credit Union announced that they were going to be scanning all their back records, converting them to computer-accessible digital data. The technology to do this, however, was too expensive for most home or small office users.

Now, a new generation of hardware and software has emerged, making these capabilities easily within the reach of every office. And they provide extra capabilities as well— as a bonus.

Canadian Computer Wholesaler
THE COMPUTER RESELLER'S HANDBOOK

COMPLIMENTARY SUBSCRIPTION

❑ **Yes,** I want to receive (continue to receive) *Canadian Computer Wholesaler.* ❑ **No**

❑ **New Subscription** ❑ **Renewal** ❑ **Change of address**

Name _____ Title _____.
Company _____.
Address _____.
City _____ Prov. _____ Postal Code _____.
Tel ( ) _____-_____ Fax ( ) _____-_____.
Signature _____ Date: ___/___/___. (must be signed to be valid) M D Y

Are you involved in the selling, reselling, and/or distribution of computer/networking systems, software or services?
❑ Yes ❑ No

Which best describes your job function? (check one only)
❑ President/VP/owner/gm
❑ Branch, store, district, regional managers
❑ Channel, retail, value added resellers and managers
❑ Purchasing and merchandising managers
❑ Product development managers
❑ Computer consultants
❑ Technical management
❑ Design, system and application engineers
❑ Marketing, sales managers

Which best describes your firm's primary business? (check one only)
❑ Hardware/software retailer
❑ Mass merchandiser
❑ Consumer electronics/office machine retailer
❑ Value added dealer/reseller
❑ Distributor/wholesaler/hardware manufacturer/OEM
❑ Software developer
❑ Systems integration/software consulting
❑ Government purchasing agents
❑ Computer maintenance/service company
❑ Other third party and allied service firms

The system my organization integrates or resells are based on the following: (check all that apply)
❑ DOS/Compatibles ❑ Networking
❑ OS/2/Compatibles ❑ Unix
❑ Windows NT ❑ Macintosh

What is the number of employees at this location? (check one only)
❑ 10,000 or more ❑ 250 - 499
❑ 5,000 - 9,999 ❑ 100 - 249
❑ 2,000 - 4,999 ❑ 20 - 99
❑ 1,000 - 1,999 ❑ Less than 20
❑ 500 - 999

What are your firm's approximate gross annual sales? (check one only)
❑ Over $50 million ❑ Over $5 million - $10 million
❑ Over $25 million - $50 million ❑ Over $1 million - $5 million
❑ Over $10 million - $25 million ❑ Under $1 million

All questions must be answered. Incomplete cards will not be processed. The publisher reserves the right to determine qualification.

Mail to: #900-1788 W. Broadway, Vancouver B.C. V6J 1Y1 or fax to (604) 739-3589

Are you a computer wholesaler, distributor or manufacturer?

Then you need to talk to computer retail owners, brokers, consultants, goverment purchasing agents, consumer electronic retailers and value added dealers/resellers. Circulation of 12,000 plus mailed across Canada Free subscriptions for qualified readers

TECHNOLOGY AND TRAINING IS
POWER AT
Your FingerTips

CDIS
CENTER FOR DIGITAL IMAGING AND SOUND
A division of
INSTITUTE OF COMMUNICATION ARTS

3248 Beta Avenue, Burnaby, BC
V5G 4K4
CDIS@MINDLINK.BC.CA
http://www.ica-cdis.com/cdis
Tel: 604-298-5400
Toll Free: 1-800-661-1885
Fax: 604-298-5403

MULTIMEDIA
◆Digital Publishing
◆Interactive Multimedia
◆World Wide Web
◆Virtual Reality

SOUND PRODUCTION
◆Music Production
◆Digital Audio Post
◆Midi Composition
◆Audio for Video
◆Music Management

COMPUTER GRAPHICS
◆Alias Power Animator
◆Softimage Extreme
◆3D Studio
◆Lightwave 3D
◆Form Z
◆Strata 3D
◆Photoshop

VIDEO / FILM
◆Digital Video
◆Motion Picture Production
◆Film Editing
◆Video Production & Editing

NEW MULTI-MILLION DOLLAR TRAINING CENTER

◆Training Excellence Since 1979
◆Semesters Commence Oct/Feb/June
◆Student Financing
◆Full or Part-Time

JUST CALL
298-5400
CENTER FOR DIGITAL IMAGING AND SOUND

Brother ImageCenter 150

Japan's Brother started out at the turn of the century, as the first company in Japan to manufacture sewing machines. More recently, they've produced a well-regarded line of laser printers and multi-function machines. The ImageCenter products are equally capable and affordable page scanners, aimed at the home and small office markets.

Looking like a small fax machine, the 2 kg (4.4 LB) unit plugs into your computer's parallel port, allowing you to plug your printer into the back of the scanner. Up to 20 pages can be loaded into the paper tray, and can be scanned in either black and white mode or in 64 tone gray-scale for attractive photographic images, at resolutions up to 400x400 dpi (four times the resolution of a fax machine's 'fine' mode).

If it's plugged into an HP Laserjet, Deskjet, or Brother laser printer, it can send the image directly to the printer— even if the computer is not turned on. (Other model printers can be used for copying, by sending images via the computer). Alternatively, working along with the computer and a fax-modem (not included), pages can be faxed to a remote recipient.

The ImageCenter 150 model includes two additional applications: Cognitive Business Card Reader software allows users to scan business cards, reading the information into a handy database. In addition, Xerox TextBridge OCR is a solid example of an optical character recognition program— it allows users to read scans (or faxes received with the fax-modem), and convert them to text that can be saved or edited in most common word processors.

In text form, documents take up much less hard disk space than in graphical format. As well, data stored in this way can be edited, altered, added to page layout software, and is more easily filed and found. (The lower priced ImageCenter 100 model ($399 list) omits these applications, but is otherwise similar. The Model 150 ships with the 'standard' edition of TextBridge; users can upgrade to the Professional version for $159. This version adds the ability to preserve the page layout of the scanned documents, along with being able to scan right into your word processor).

The ImageCenter software installs TWAIN drivers, letting the scanner be run right from the menus of any Windows program that supports the TWAIN standard— most graphics programs, as well as many page layout and word processors. As well, the ImageCenter Manager makes it easy for users to use the scanner for scanning, copying, fax, or OCR. ImageCenter Editor provides basic image editing capabilities. Unlike some competing products, however, Brother is not including any document management software— this software allows users to file scanned documents along with searchable keywords, or in some cases, even an index of the contents— making the scanner and OCR software a capable

NANTRON SYSTEMS LTD.
MEMBER OF BBB
SERVE THE COMMUNITY SINCE 1989

MULTIMEDIA SYSTEM SPECIAL
P5-75 $1858
486DX2-80 $1598

. GA 586/486 PCI/ISA PNP M/B
. 3PCI/4ISA, 72PIN, LBA, F/BIOS
. 256KB CACHE EXP'L TO 512KB
. PB CACHE FOR P5 +$48
. 8MB RAM EXP'L TO 192/128MB
. EDO RAM FOR P5 +$40
. 850MB EIDE HDD MODE 3
. 1.44MB FUJITSU FDD
. 1MB SVGA CARD EXP'L TO 2MB
. ON BD EIDE/EIO (2X16550+EPP)
. PS2/BUS MOUSE PORT FOR P5
. 14" SCEPTRE NI GR LR MONITOR
. 104 ENHANCED WIN95 K/B
. 3B HI-RES MOUSE W/PAD
. 19" MID TOWER CASE WITH LED
. 14.4 INT. FAX MODEM
. 4X INT. EIDE CDROM DRIVE
. 16 BIT STEREO SOUND CARD
. 35W SPEAKERS W/AC POWERED
. EXTERNAL MICROPHONE
. 6 MPC CDROM TITLES '96
GROLIER ENCYCLOPEDIA
ANIMALS, CHEESE MASTER
WORLD/US ATLAS, TYPING
. UPGRADE TO:
16MB RAM $258
1.2GB HDD $78
15" MONITOR $148
28.8 FAX MODEM $148
14.4/28.8 VOICE $18/168
MS HOMECD PACK $45
WIN 95 FULL VERSION $138
CANON BJC-4000 PRT $389
4X HP CD WRITER $1399
6X CDROM DRIVE $100
800MB TAPE BACKUP $248

PRICES SUBJECT TO CHANGE WITHOUT NOTICE

P5-75 $1688
P5-90 $1768
P5-100 $1798
P5-120 $1918
P5-133 $2158
. GA 586ATEP TRITON PNP M/B
. 4PCI/4ISA, ZIF, 72PIN, F/BIOS
. 256KB PIPELINE BRUST CACHE
. 8MB EDO RAM EXP'L TO 192MB
. 850MB EIDE HDD MODE 3
. 1.44MB FUJITSU FDD
. ON BOARD EIDE/FDD/EIO
. 2S(16550) 1P(EPP) 1M(PS/2)
. ATI PCI M64 1MB EXP'L TO 2MB
. 14" SCEPTRE NI LR GR MONITOR
. 101 PROXEL 2000 ENH. K/B
. 3B LOGITECH MOUSEMAN & PAD
. 19" DUAL CSA MID TOWER CASE
CX586-100 SYSTEM only $1498

HOT PARTS SELECTIONS
4/8/16MB SIMM RAM.....$138/268/530
1.2/1.44MB FLOPPY DRIVE.....$65/36
850M/1.2G/1.6GB HDD.....$278/338/449
CD DRIVE 4X/6X.....$158/258
TAPE DRIVE 420/800MB.....$199/249
DOS6.2 & WINDOWS 3.11WG.....$128
WINDOWS 95 FULL VERSION.....$138
MS HOME 7 TITLES (ENCARTA).....$98
6 CDROM TITLES (GROLER 96).....$39
40W/120W SPEAKERS (AC).....$28/78
14.4 INT. VOICE/FAX MODEM.....$75/68
28.8 USR INT. FAX/VOICE $259/289
28.8 FAX MODEM INT/EXT.....$218/239
PCI/VLB/ISA IDE/IO CARD.....$28
PCI/VLB/ISA VIDEO 1MB.....$98
ATI M64 2MB D/VRAM.....$238/338
DIAMOND ST64 2MB D/VRAM....$238/338
DIAMOND ST64 1MB M2001.....$158
M/B 486DX/256 80/100/120...$208/248/288
M/B CX586/256 100.....$328
M/B P5 TRITON 75/100/120..$448/548/648
MONITOR .28 NI LR GR 14"/15".$308/458
MONITOR FLAT DIGI 17".28/.26.$800/900
MS/LOGITECH/K9 MOUSE.....$35/32/15
PROXEL 101 ENH K/B.....$28
FUJITSU 4700/4870/8720 K/B.....$58/42/33
CASE 13"/19"/FULL.....$68/88/118
MICROPHONE/EARPHONE.....$12/8
SOUND BLASTER 16/AWE32V....$110/210
ZIP DRIVE SCSI/PRT PORT.....$365
HP 4X CDROM WRITER.....$1399
NEC 4X SCSI EXT 7CD CHANGE.....$499
4X/6X CDROM PACKAGE...$378/478
4X/6X EIDE CDROM DRIVE
SOUND BLASTER 16 CARD
40W SPEAKERS WITH AC POWER
MICROSOFT HOME '95
MICROPHONE
CD COPY/BACKUP SERVICE
BIG OF SELECTIONS ON HOT CDROM TITLES AND BOOKS !!!

Your First Choice
NOT ONLY AFFORDABLE AND HIGH QUALITY COMPUTERS,
WE OFFER YOU TOTAL SOLUTIONS!
1745 Nanaimo Street (Near 1st Ave)
Vancouver, B.C. V5N 5C1
Tel:(604)253-1588 Fax:(604)253-8681

replacement for paper documents and banks of filing cabinets.

Despite this lack, with its small size and affordable price, the ImageCenter provides a welcome collection of features for many home offices and small businesses.

Willowbrook E-Z Office

The E-Z Office, from Ontario's Willowbrook, is in some respects, a more ambitious product. It includes the E-Z Page Scanner (also available from Microtek), about half the size and weight of Brother's model. At 1.1 kgs (2.4 lbs) it could be a possible addition to a portable computer, however, it gives up some capabilities— it scans at a maximum of 300 dpi and 16 gray-scales. The lower resolution is not a big loss for scanned text, but appearance of scanned photos is clearly inferior to the Brother product. As well, only a single page can be fed through it at a time, making it more awkward to scan multi-page documents.

While also benefiting from easy set up to the PC's parallel port, and shipping with basic OCR software (in this case, Caere's OmniPage Limited Edition), the real strength of this product is the inclusion of PageSuite software. This allows users to annotate documents, for easy organization in PageSuite's Cabinet. This provides a virtual file cabinet, allowing users to store documents in folders, for easy organization and retrieval. A Quick Panel provides instant access to copying, faxing, E-mail, and scanning functions.

As well, however, the E-Z Office package includes a 28.8 kbs internal fax modem (using the standard Rockwell chipset) and software. This allows the full range of electronic data and fax capabilities, including voice capabilities. It can be set to answer phone calls, automatically recognizing voice, data, or fax calls. Along with the accompanying software, (Cheyenne Bitware ver 3.30 for Windows) it provides answering machine functions, including multiple mailboxes and speakerphone. Faxes and voice messages can be forwarded to another location when you are traveling. Windows 95 modem drivers are included.

Since many would-be customers already have fax-modems, it might seem like this would limit the potential market— Willowbrook, however, believes that most users have 14.4 or slower modems, and that the inclusion of a 28.8 high speed modem, along with microphone and voice capabilities will prove a real draw. Certainly, this combination of features will allow users to simply add

computer and printer to get a full-functioned small digital office.

While producing somewhat lower-quality scans than the Brother products, the PageSuite software and modem features could prove a valuable addition to many users. As well, while the included modem can only be used in a desktop computer, the scanner could easily be taken on the road. Combining the telephony hardware and software with the scan/copy/fax/file capabilities, this package meets a large number of small office needs in a single box.

Neither of these products will replace a higher quality flatbed scanner for anyone needing to often scan graphics— look elsewhere, perhaps at HP's new grey-scale ScanJet 4P or colour 4C models. But for home offices or small businesses looking to add basic scanning/fax/ocr, either is worth a look, with Brother providing more grey-scales, higher resolution, and multi-page support, and the E-Z Office providing better portability, document management software, and an included 28.8 modem with a wide range of functions. ❑

About the author: *Alan Zisman is a teacher and an associates editor of Computer Player, he can be reached at e-mail at alan_zisman@computer-player.com*

Product: ImageCenter 150 OCR
List price: $499
Company: Brother International Corporation (Canada)
7611 Alderbridge Way
Richmond, BC
Tel: 604-273-8466
Fax: 604-273-5680

Product: E-Z Office
List price: $699
Street price: $620
Company: Willowbrook Technologies Inc.
400 North Rivermede, Suite 100 Concord, Ontario L4K 3R5
Tel: 905-660-8891
Fax: 416-660-8768

ROM CITY CANADA
1-800-ROM-CITY
Canada's #1 Mail Order HOTLINE
CALL FOR OUR FREE COLOUR BROCHURE
1996 Start Your Engines
Warcraft II $52.88
Phantasmagoria $58.81
11th HOUR $59.88
NHL 96 $49.78
Indy Car Racing 2 $53.98
Screamer $49.78
Need For Speed $49.78
New releases arrive regularly Call for updates
Start 96 With Wing Commander: The Price of Freedom $58.88
& Fly Through The Year
The savings keep adding up!
With Rom City · You ALWAYS SAVE!
THE DIG $54.98
VIRTUAL POOL $34.95
MAGIC CARPET 2 $54.98
REBEL ASSAULT 2 $54.98
COMMAND & CONQUER $54.98
U.S. NAVY FIGHTER GOLD $58.88
TORRINS PASSAGE (Sierra) $49.78
Need a special game? Don't see it in our ad? Call us 1-800-ROM-CITY We carry many other top hits
136 Winges Rd. #8 · Woodbridge · 905-264-0303 Money Order
SHIPPING: Express Service $7.00 · COD add $3.50
OVERNIGHT: Purolator $7.00-$12.00 (no COD)

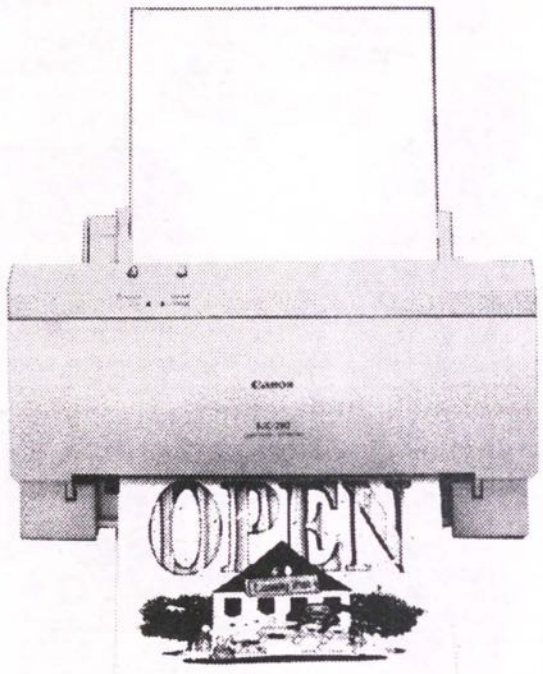
ADULT CD-ROM
Interactive Games · Interactive Movies · Photo Cd's · For Video CD · CDI · 3DO
AO Rom City
BRAND NEW!
Save over 25%-40% OFF
Have yourself a girlfriend for '96 GIRLFRIEND TRACY! Only $79.95
Diva·X New TFUI 3D interface that mimics human spoken language. X·DIRECTOR Pixis puts you in the director seat! Record · Play · Save & edit your favourite XXX sequences
Ariana Only $69.95
Save almost 40% $30.00 off with this coupon expires March/96
The only ARTIFICIAL INTELLIGENCE game. She learns anything you want to teach her FOREVER!
VCA's Technorotica
Brand New Line! VCA
Only $59.95 ea.
Also New! Chameleons Nasty Parts Sorority Cyber Babes
Virtual Sex
P*R*N*O Poker
The #1 Adult studio in the world VCA goes CD-ROM!
Only $9.99 Choose & play multiple games & movies all on 1 CD
TOKYO GLAMOUR GIRLS Reg $49.95 Sale $36.95
SAMURAI PERVERT Reg $69.95 Sale $44.95
TOKYO NIGHTLIFE Reg $69.95 Sale $44.95
VIRTUALLY YOURS 2 Reg $69.95 Sale $44.95
SPACE SIRENS 2 Reg $79.95 Sale $54.95
$10.00 off with this coupon Expires March/96
FREE! 1-800-ROM-CITY 16 Page ADULT CATALOGUE
CYBERSTRIP BLACKJACK SPACE SIRENS VIRTUALLY YOURS 1
Only $39.95 ea.
NEURODANCER VIRTUAL VIXENS MIND TEAZZER 2
Name Address City TEL# Prov P/C
You must be 18 or over to order. Signature must accompany order form. By signing I declare that I am 18 or over.
Signature
SHIPPING: Express Service $7.00 COD add $3.50 PUROLATOR: Overnight $5.00 - $12.00 (call)
VISA · Master Card Chq · Money Order
Send To: AO RomCity 136 Winges Rd. #8 Woodbridge · Ont · L4L 6C3
TITLE
[ ] ADULT CATALOGUE Free
GST 7% $
PST (Ont only) 8% $
TOTAL $
[ ] Visa [ ] M/Card CARD# Exp Auth

...add a Canon Printer to your computer you got for Christmas!

Canon Image the possiblities...color printing that's easy, fun and affordable!

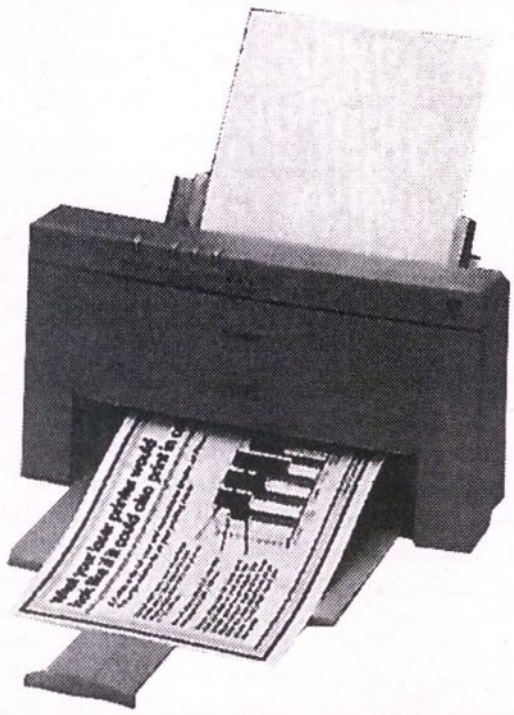
BJC-210
- 48 nozzles
- 720 X 360 dpi
- Up to 4 ppm
- 62 KB buffer
- 100 sheet built-in sheet feeder
- 2 year to your door replacement guarantee

BJC-70 portable color printer $499



BJC-4000
- 128 nozzles
- 720 360 dpi
- 84 KB buffer
- Auto/manual 100 sheet bulit-in sheet teeder
- 2 year to your door replacement guarantee

Canon LBP 430W Laser printer $599



PENTIUM® processor power

INTEL Pentium® processor
PCI Green New Bios motherboard
256K High Speed cache
8MB 72pin SIMM RAM
1.08GB Enhanced IDE Hard Drive
2.88MB Floppy Drive
PCI Video Card 1MB exp. 2MB
I/O with 2S, 1P, 1G Ports
14" non-interlaced SVGA monitor .28dp
Enhanced 101 keyboard
Tower Case w/230W power supply
FREE: 3 button mouse & mouse pad

64 bit PCI bus

UPGRADE TO
16MB / 32MB 72pin SIMM RAM
+$345/+$865
ATi M64 2MB DRAM SVGA
+$120
KDS 15"/17" N-I, L-R
+$140/+$550
120/133/150MHz Pentium® processor
+$PLEASE CALL

INCLUDE SONY 2.88MB Floppy Drive

New 4X Density

100MHz Pentium®processor $1699
incl. PCI /8MB RAM/1.08GB HDD/2.88MB FDD

Fujita 486 System
ASSEMBLED IN CANADA

VESA Green New Bios Main Board
256K Fast cache
4MB SIMM RAM
850 MB Enhanced IDE Fast Hard drive
1.44MB Floppy Drive
VESA Video Card 1MB
VESA IDE Controller Card w/2S, 1P, 1G Ports
14" non-interlaced SVGA monitor .28dp
Enhanced 101 keyboard
Tower Case w/230W power supply
FREE: 3 button mouse
FREE: mouse pad
FREE: 10 pcs. (1 box) 1.44MB Floppy Disk

Unbeatable Price!

UPGRADE TO
8MB/16MB SIMM RAM
+$180 / +$460
850MB EIDE hard drive
+$55
PCI motherboard + PCI Video Card
+$80 64 bit PCI bus

DX2-66MHz $1050
DX4-100MHz $1179

HOLLY COMPUTER

9-4751 Shell Road • Richmond • Tel: 604-279-2580 • Fax: 604-279-2581

Yes, I will back-up my drive... tomorrow

By Rick McLaughlin

I'd like to start off the new year with a response to my last article. Although I received overwhelmingly good responses, there were a few people who felt that they had to voice their rude remarks.

If you want to give your views or respond to an article then write or e-mail the Editor. In the mean time, I'll carry on writing articles on companies that give lousy service, have bad products, rip off consumers and of course, try to help out the many people that need advice on products and service. I feel it's my responsibility to expose the fraudulent and to inform the public. I would like to thank those who sent me the 52 e-mail messages and the countless phone calls I received. It gives me a good feeling knowing that I have helped someone with a problem.

Our 1996 resolution - Backing up my data

Well, the holidays are over and it's time to start considering some of those New Year's resolutions that we all make and rarely keep. There is one resolution that I would like all of you to really try to keep as a good Canadian. It is, in plain and simple terms. . . "Backing up your computer files."

Over the years, I have had to deal with many people who have lost their data due to a computer problem - most often a hard drive crash. Needless to say, this kind of situation is extremely nerve racking and in some cases. . very expensive. It doesn't have to be that way. With all the methods available to us today for backing up data, there is No excuse to lose all your data other than personal laziness.

What is a Backup?

A backup is the storage of data (normally in a compressed format) that is taken from your hard drive(s) and stored on one of several types of media. All backup material has a restore capability. There are several different ways to do a backup. Lets go over them and try to find the one that's best suited to your needs.

These are tips you can use to maximize your backup resources. Do full backups only over the weekend (starting Friday evening) and incremental backups Monday-Thursday. (Try to do a full or new backup each week-this makes both backups and restores faster.

Consider the relative value of everyone's data. Some computers require nightly backups, while others require backups every other day. Establish groups with different priorities by scheduling a different backup server script for each group. Start backups as soon as possible in the evening. (Most people leave by 6 PM.) Use automated tape libraries (loaders/stackers/jukeboxes) to extend capacity backups.

Back up only documents and preferences. (However, I recommend backing up all files—it won't make the backup go faster, but it sure makes the restore go a lot faster.) Create and maintain a custom selector to ignore games, the trash folder, and other unwanted files. These types of files are not important data and if anything does happen to your hard drive, you can always reload the programs. Remember, these programs do not create useful data files. If possible, don't use encryption for either the backup media or link encryption for Remotes. Encryption requires extra processing and slows the backup. Use hardware compression (if available), since software compression slows down the backup. Not only are files copied faster, but also more data can fit on a tape.

Hardware solutions fall into three categories:

1.) Drives for network or server backup
2.) Drives for individual backup
3.) Multi-purpose drives for a variety of uses.

This section discusses the relative merits of all the options and compares their advantages and disadvantages.

Floppy Disk Drives: Because floppy disk drives come built-in with most com-

TKC Knowledge Center / Super Tek
#201-6200 No. 3 Road,
Richmond B. C. V6Y 2B3
Tel: (604) 273-1118
Fax: (604) 273-2730

電腦教學　小班制度
博士、碩士及專業教師
視窗 95 · Internet
電腦快速入門 · 中文系統
硬體維修 · C/C++ 程式語言
Lotus, Word Perfect
Word, Excel
學生每人一機
全部都是 Pentium 電腦
教學經驗豐富

Pentium 75 $1599
Intel Pentium 75
8 M Ram 256K Caxhe
1.44 Floppy Drive, 850 MB, HD.
SVGA 1MB Ram Video
Mini Tower Case
101-Key Keyboard
Serial Mouse W/Pad
14" NI LR Colour Monitor
Gigabyte PCI Motherboard

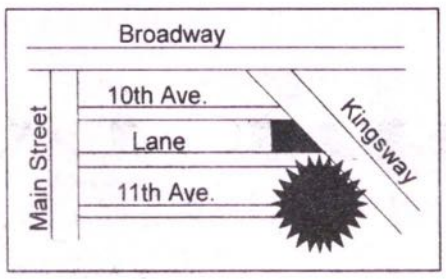
Pentium 120 $2995
Intel 120
16 MB Ram 256 K Cache
1.44 Floppy Drive, 1.08 GB HD.
Diamond PC! 64 2MB Video Card
Med Tower Case
104-Key Keyboard
MS/Logitech Mouse W/Pad
15"NI LR Colour Monitor
Quard Speed CD ROM
SB. 16-Bit Sound Card, Speaker
28.8 Internal Fax/Modem
Gigabyte PCI Motherboard

WD Hard Disk	1.6 GB	$490.00
	1.2 GB	$395.00
	1.08 GB	$340.00
	850 MB	$280.00
HP 5L Laser Printer		$680.00
Canon BJC-4000 Colour Printer		$395.00
Canon BJC-210 Colour Printer		$385.00
Panasonic 4XCD-ROM Drive		$180.00
USR 28.8 Internal Fax/Modem		$250.00
NEC XV 15 Colour Monitor		$650.00
NEC 1.08 GB Hard Disk		$320.00

免費 Internet Access 或是 4 小時電腦課程
詳情請電 273-1118
Two Years Parts & Labor Warranty - *System only*
Prices Subject to change without notice

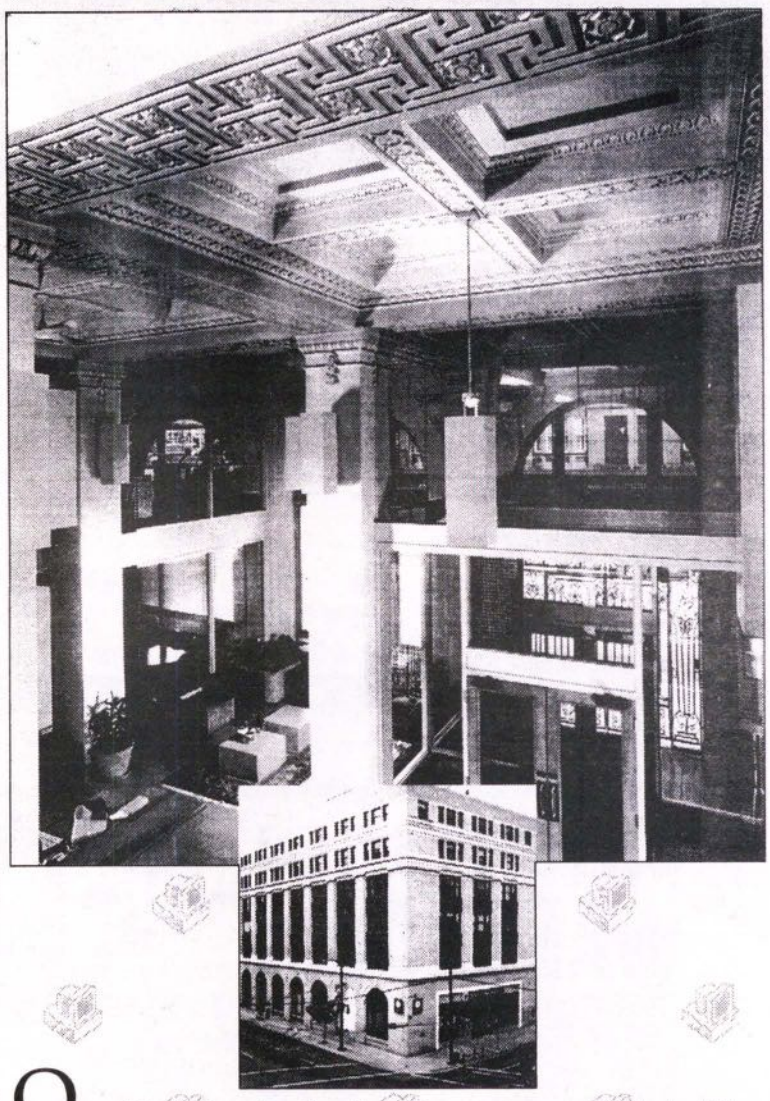
COMPUTER CLEARANCE WAREHOUSE
USED COMPUTERS & PARTS
QUALITY PRE-OWNED COMPUTERS & PARTS
WE Love Trades!!

USED VGA MONITORS
We Buy (Dead or Alive) & Sell
Call Now!
Vancouver's BEST Computer Store



250 Kingsway, Vancouver B.C.
Tel: 879-7776
Monday-Saturday 9:00am-7:00pm
Sunday - 12:00pm-6:00pm

HERITAGE BUILDING PREPARES FOR THE NEXT CENTURY



One of Vancouver's oldest buildings has upgraded its facilities to cater to the growing hi-tech business community. As the original home of B.C. Electric, it was in fact the true communications centre of Vancouver for over half a century. Now, appropriately, *The Carrall Building* has become a multi-media mecca – home for a plethora of communications oriented businesses, such as audio & video post production, recording, advertising, computer animation, graphics, and of course, film production studios. Located in the rapidly expanding, always exciting neighbourhood directly between Gastown and Chinatown, *The Carrall Building* is now a major world-wide Internet hub, equipped with a full **10 megabit connection** – that's equivalent to *seven* T1 Lines! With a download rate of **1.2 megs per second** we are poised to compete effectively in the world-wide electronic market, and ready to meet the needs of the most demanding hi-tech businesses.

...and there's still space available!

For more information on how you can get involved, call

684-2249

THE CARRALL BUILDING

425 Carrall Street, Vancouver B.C.

Come Join Our Network!

puters sold, it is not surprising that floppy disks are popular for personal computer backups. Their performance and capacity make them impractical for backing up the typical personal computer's 160MB to 500MB hard disk. Even with highly optimized backup software backing up only your most critical 40MB of files, you have to spend three to four hours inserting and removing floppy disks. If you have more data than spare time, you should choose one of the other inexpensive storage options better suited for backup and archiving.

Data Cassettes Drives: Data cassettes derive from audio cassette technology and use the data equivalent of audio tapes. Primarily based on a TEAC mechanism, these drives use tapes ranging in capacity from 150MB to 600MB.

DC2000 Drives: The DC2000 was a common mechanism used in early tape drives with modest capacity and performance. Manufacturers have improved upon the original design, increasing available capacity up to 2GB or more, raising performance and lowering prices in the new generation of DC2000 drives.

DAT Drives: Rapid decreases in the price of digital audio tape drives have made them popular for individual backup, as well as for network and server backup. They are a particularly good choice for users with large hard disks.

Removable Cartridge Drives: Many individuals do their backups with removable cartridge drives (such as Zip, Jaz, SyQuest, and magneto-optical) which are not dedicated solely to backup. These drives are described next under "Multi-purpose Drives."

Capacity: In evaluating hardware-especially tape drives and particularly compression drives-the rated capacity should usually be viewed as the theoretical maximum. The capacities achieved in day to day use are often significantly less. The actual amount of data that will fit on a given medium will vary due to many factors. For instance, a tape's capacity can be greatly influenced by the relative speeds of the backup computer and the tape drive. Another factor is compression, a feature of some drives and software which reduces the size of the data being backed up. Theoretical maximum capacity representations refer to the amount of data before it gets compressed by a tape drive with hardware compression capability-and they often assume generous compression rates.

Network or Server Backup Hardware: Backing up servers or entire networks of computers requires hardware that can store extremely large quantities of data-hundreds of megabytes, even gigabytes-over a relatively short period of time-overnight or weekend. Fortunately, many different reliable, high-capacity, high-performance backup devices are available.

DAT Drives: Four millimeter Digital Audio Tape drives have become very popular backup devices because of their low cost, quick speed, and low media cost relative to the high capacity. The drives use a helical scan method to store data on 4mm digital audio tapes, though special data grade tapes must be used. Tapes written to by a given DAT drive can usually be read by DAT drives from another manufacturer, provided they use the same format and compression features, which is a useful compatibility consideration. Many vendors offer several types of DAT drives varying in capacity from 1.3 to 4GB, while models with compression offer up to 8GB of storage. In recent years DAT drives have become an industry standard for backup devices by combining reliability, high capacity, and low cost.

Exabyte 8mm Tape Drives: Like DAT drives, Exabyte 8mm tape drives are helical scan devices that can store large amounts of data on a single tape. Rather than digital audio tapes, 8mm drives use the data version of the tape used in 8mm video equipment. These drives and media are also popular on workstations and mainframe computers.

DC6000 Tape Drives: Unlike the DAT and 8mm tape mechanisms borrowed from other industries, the DC6000 mechanism is a more traditional backup tape technology. DC6000 devices store data linearly on each tape. As a result, data is stored less densely than on DAT or 8mm drives. DC6000 devices range in capacity from 60MB to 5GB, with compression drives potentially doubling capacity up to 10GB.

Digital Linear Tape: (DLT) drives are among the fastest tape drives available. Their Quantum mechanisms offer exceptional performance and capacity when used under optimal conditions. DLT drive models are available in five capacities: 2.6GB, 6.0GB, 10.0GB, 15GB, and 20.0GB, with compression drives potentially doubling capacity up to 40GB. To achieve its high speed and large capacity, a DLT drive requires a high performance environment. The most important performance factor is the speed of the backup source through the data pipe. If the source is too slow, the DLT drive must frequently stop to reposition the tape while waiting for additional data. If the drive repositions too often, performance decreases dramatically.

Autoloaders (The big mans backup system): Several manufacturers now offer autoloaders, which use one or more drives (typically tape drives discussed above) integrated with a mechanical loader. The loader moves media between the drive and a magazine containing sev-

eral media, multiplying the available storage capacity several times over.

Like multiple-disc audio CD changers which automatically play one CD after another, extending your listening time, autoloaders extend the duration of unattended backup operation. When used with appropriate backup software, autoloaders allow multiple storage set backup strategies to be implemented in the absence of a person to change media.

Individual Backup Hardware: Whereas network and server backup often requires extremely high-capacity, high-performance backup hardware, individual backup places more importance on the cost of the hardware solution, hence the popularity of floppy disks.

Multi-purpose Hardware: The following drives are primarily used for archiving, data exchange, and long-term storage and are used only secondarily for backup. They usually are more expensive or require much more expensive media than dedicated backup devices such as tape drives. However, if you need one of these drives for other purposes, they can do double duty as part of a backup system.

Removable Cartridge Drives: Zip, Jaz, SyQuest, and Bernoulli drives use removable cartridges that approach hard disks in performance. Because they are random access devices, you can use them as either desktop-mountable volumes or as storage devices for backup and archiving.

Hard Disks and Servers: Using hard disks or hard disks installed as servers for backup is almost always the most expensive backup solution, albeit a potentially high-performance one. Keep in mind that most users whose backup demands outgrow floppy capabilities need a backup device with capacity equal to or greater than their hard disk size. Therefore, a hard disk used for backup must be at least as large as the one used for normal use.

Note: Using hard disks as secondary storage devices usually makes sense only when special requirements to guard against hardware failures call for techniques like disk mirroring. With disk mirroring, instead of storing information on a single hard disk, you use a second hard disk to duplicate data. If one hard disk fails, computing can continue on the other one. Disk mirroring is not a replacement for backup because it only provides immediate protection against disk failures, not against accidental deletion, data corruption, virus, theft, or natural disaster.

Magneto-Optical Drives: Unlike disk drives which use a magnetic coating to store data, magneto-optical (MO) drives use light to store data on a removable optical disk. For most of these mechanisms, writing information onto the disk requires three passes over the disk, whereas reads require only one. This results in asymmetrical performance for applications like backup; backup is slow but retrieval of information (particularly of specific files) can be fast. Their high capacity (relative to other removable cartridge drives) and flexible nature make MO drives a good choice for users with multiple tasks.

CD-R Drives: Recordable compact disc drives use a laser to store and retrieve data on a removable, optical disc. Data stored on these discs cannot be erased, so these drives tend toward archiving use rather than backup. CD-R discs, like CD-ROM discs and audio compact discs, are durable and long-lived, making them ideally suited to archiving. CD-R drives require special software, as they are not directly supported by popular operating systems. Unlike MO and other removable cartridge drives, CD-R drives cannot be used like hard disks or floppy disks.

Phase Change (PD) Drives: Phase change drives are unique and flexible in that they work with both proprietary optical media and CD-ROM discs. The quad-speed CD-ROM capability, being "read only," is not useful for backup or archiving, but PD drives are capable of storing 650MB on each optical cartridge. PD optical cartridges work like removable hard disk cartridges, MO cartridges, and floppy disks.

I can't over emphasize the need to backup your data. I've always thought of it as accidentally laying your hand on top of a red hot store element. Now the odds of doing that are pretty darn thin, but if it ever does happen. . . baby, it's gonna hurt like heck!

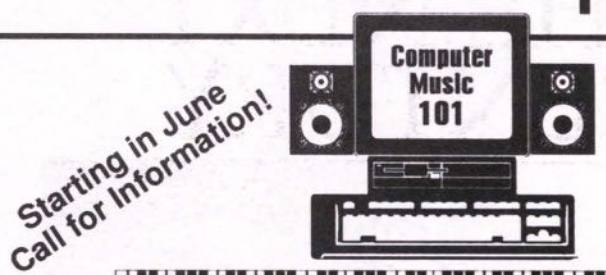
Remember, it's not IF your hard drive fails. . . it's " WHEN".

Well that's a wrap for this month. Hope to see you all at our booth at COMDEX this year. Until then,

Happy Computing. ❑

About the author: ***Rick McLaughlin*** *is a leading computer consultant from New Westminster and can be reached at (604) 521-6831 or e-mail at rick_mclaughlin@mindlink.bc.ca.*

Make Music with Your Computer



FORMAT
4 week course
1 1/2 hours per week
8 people per class
1 computer music station per person
Qualified Instructors
Introduction $99.00 Advanced $129
TOPICS COVERED
MIDI Basics • Music Sequencing

929 Granville St.
685-8471 or 688-8929
TOM LEE Music
MUSIC SUPERSTORE

Diskette Supply
Diskette Duplication Services

3.5" 2HD Floppy Disks
HIGH RELIABILITY & MOST COMPETITIVE PRICES

- 100% Certified & Tested
- Full Lifetime Warranty
- 1.44MB Formatted, High quality Boxed 10/25/50
- Duplication grade, unformatted diskettes High Clip, Boxed 50
- Full diskette duplication services

SUNNET IMAGE LTD.
6851 Antrim Avenue
Burnaby, B.C. V5J 4M5
To Order:
Tel: (604) 437-3388
Fax: (604) 437-3308

THE BEST SOURCE OF MEMORY UPGRADES
DON'T WASTE YOUR MEMORY!!!
TALK TO US!! THE ONLY MEMORY CONVERSION CENTRE IN CANADA
SimmStack Pro 4 X 30pin to 1 X 72pin converter
SimmStack Pro 72pin slot doubler
400pcs SOLD -- 0% failure rate!!!
WATCH OUT FOR PROBLEMATIC IMMITATIONS!!
Tested to runs with NOVELL, PC and Mac
NEW: SimmSaver 8 X 30pin to 1 X 72pin converter & SimmSaver 4 X 30pin to 1 X 30 pin converter
LIFETIME WARRANTY & MONEY BACK GUARANTEE!
INTRODUCING : SimmStack Lite 4 X 30pin to 1 X 72pin converter ONLY 35!!!
We also offer the BEST price in SIMM and DIMM for Mac systems, hardware & software for Mac and PC at excellent prices. Call us to find out more!!

DISCOUNT COMPUTER CLUB
Previously known as Discount Software Club
2/F, 145-4471 No.6 Road Richmond, B.C. V6V 1P8
Tel: (604)821-1108 Fax: (604)821-0813 Fax-on-demand: (604)525-1089
Visit our Web site: http://WWW.Starcon.com/discount/
Get Price lists and weekly special by calling our fax-on-demand system.
If you would like to receieve our weekly special fax, please register at 821-1108.

Compare

The DeskTop Lawyer®

To Any Other Legal/Business Software Package Available...

There Is No Comparison!

SAVE HUNDREDS MAYBE THOUSANDS IN PROFESSIONAL FEES

A Canadian Product Developed In Canada By Canadians *(Not A Modified American Product!)*

Over 150 Specialized And Legally Binding Agreements

13 Sections Covering Virtually Everything to Setup & Manage Your BusinessCorrectly:

• Document Setup • New Business • Business Services • Employment • Buying • Selling • Collections
• Credit/Debit • Corporate Management • Commercial Leases • Assignments • Personal Section •
• (Real Estate, Wills, Powers Of Attorney, Trusts, Etc.) • Over 20 Business Forms •

Compare Our Features

- **Registration Service To Keep You Up-To-Date With Any Changes In The Law-We Are Constantly Monitoring The Package For You (Anyone Else Offer You This Service?)**
- **Complete Comprehensive Notes From Lawyers, Accountants & Business People To Assist You In Preparing Your Documents Correctly**
- **800 Number For Technical Support**
- **Works With Your Word Processor (No New Program To Learn!) Allows You To Completely Edit And Customize *Every* Document For Your Specific Needs**

"And Now The Best Part....."
" Check Out Our New Prices"

DeskTop Lawyer	$99.95
• Consulting	$79.95
• Home Office	$24.95
• Canadian Wills	$39.95
• Franchising	$495.95

Check Out The Other Products In Our *Full Business Series:*

- **Consulting...** ***Developed Specifically For Consultants***
- **Home Office...** ***To Manage Your Home Based Business Efficiently***
- **Canadian Wills...** ***Prepare Your Own Will, Power Of Attorney, Etc***
- **Franchising ...** ***All The Legals To Franchise Your Business***

(Maybe You Can't Check These Out Because We Don't Know Of Any Other Specialized Packages)

For More Information:

Proform Software International

Phone 1.800.661.1961 Fax 613.739.4303

Attention Retailer...Contact Us For Information On Our Retail Package!

Non-Residents Can Be Taxable In Canada

By Richard K. Acton

This month I would like to deal with the issue of taxation of non-residents on Canadian source rental income and capital gains and also instances where people who have believed themselves not to be resident in Canada are considered resident for tax purposes.

Rental Income and Capital Gains Earned by Non-Resident Landlords

Non-residents holding property in Canada are taxable on the income from that property. This may be determined in one of two ways. The first is by a withholding tax of 25% of the gross amount of rent without the deduction of any expenses. This is somewhat onerous as the actual tax may well be less if expenses are deducted.

There is an alternative method which allows for expenses. If a non-resident files an income tax return and reports his or her rental income, he or she may deduct the expenses such as mortgage interest, property taxes, repairs and maintenance, capital cost allowance, etc. to arrive at the net income. While a non-resident taxpayer will not be allowed to use any of the normal personal tax credits that a resident taxpayer can, the tax will be calculated on the net income in the normal manner. The tax is then calculated and remitted to Revenue Canada on filing, taking account of any tax withheld from payments to the non-residents.

This method is optional and can only be used if a T1 personal income tax return is filed within two years from the end of the year in which the rents were received. This filing does not change the requirement of the Canadian resident paying to the non-resident to withhold 25% of the rent and remitting it to Revenue Canada. The withholding may be avoided or reduced if a non-resident has an agent in Canada and the non-resident has filed an NR-6 indicating that he or she will file a T1 within six months of the end of the taxation year. The NR-6 must be filed on or before January 1st of the taxation year or before the first payment of non-resident tax is due. If there is an agent, then the agent may withhold based on the estimated net income as opposed to gross. However, a person acting as an agent should be cautious as he or she may be held liable for the amount not withheld if the tax return is not filed and the taxes not remitted.

When the non-resident disposes of the property, he or she will be subject to capital gains tax on the property. If capital cost allowance has been claimed and the property is sold for an amount in excess of the unclaimed capital cost allowance (depreciated value), then the recapture will be taxed as income.

Revenue Canada has the concern that a non-resident may sell his property and receive the funds and never file a return or pay the tax. Consequently any person who purchases real property from a non-resident is required to withhold 33 1/3% of the purchase price and pay to Revenue Canada against the account of the non-resident vendor's tax liability. This may be avoided if the vendor has reported the sale to Revenue Canada and has either paid an amount equal to 33 1/3% of the estimated capital gain or has posted security for payment of the tax liability. If the sale is not reported in advance of the transaction, the non-resident vendor is required to report it within 10 days after the sale. This is done by way of a form T2062 which may be obtained from a Revenue Canada office. Although the T2062 is filed and a tax payment is made, the vendor must still file a Canadian income tax return after the end of the year to report his or her taxable income and the tax thereon. The vendor will then receive a refund or will be required to pay the balance owing by April 30th.

Some non-residents may be exempt under an International Tax Treaty. However, you should consult a Chartered Accountant to determine whether this applies to you and in any event, to determine the best way to plan the sale and legally minimize the taxes paid and the amount withheld.

You May Be a Canadian Resident and Not Know It

Reviewing taxation of rental income for non-resident's leads me to raise the issue of Canadian residency. The tax rules often result in individuals being resident for tax purposes although they do not reside in Canada. These individuals who believe they are not resident may be "residents in fact" or "deemed residents". There is a distinction between the two. In either case, an individual would be subject to Canadian tax on his or her worldwide income.

With respect to deemed residents I am not going to deal with individuals who are employed abroad in an official or quasi official capacity. Rather I draw your attention to the rules concerning sojourning in Canada. You are a sojourner if you spend periods totalling 183 days or more in a year. As such, you are deemed to be a resident of Canada. If you are a deemed resident, then you must file a Canadian tax return on which you will report your worldwide income for the year. In the case of an immigrant who arrives 200 days before the year end, the immigrant would not be deemed resident for the entire year. Rather, the immigrant would be resident from the date of arrival to the end of the year. Sojourners are those who would not otherwise be resident in Canada except for the fact they have spent 183 days or more in the country, not necessarily on a continuous basis.

"Residence in fact" may trap individuals who assume they will not be resident because they were here for less than 183 days. Although there is no specific law defining a "resident in fact" there are some guidelines:

1. You are a Canadian resident if you reside primarily in Canada.

2. You may be a resident in fact if you live elsewhere for most of the year but you maintain ties here such as:

a) a family

b) a home

c) personal property such as a car, furniture, bank accounts

d) club memberships

e) other indicators that you are resident

3. If you are a resident who leaves for less than two years, Revenue Canada will assume that you are a resident unless you can prove that you did not intend to return to Canada at the time you left.

If you do not live in Canada but are a resident in fact, you are liable for tax on your worldwide income. You may receive a tax credit for taxes paid to a foreign country on business or employment income and some credit for other income. If you are a resident in fact, you must file a tax return for the province in which you resided at December 31st.

There may be many readers or families of readers who have assumed they were not resident because most of their time was spent out of the country. However, if you have moved your family here and established ties that would indicate an intention to remain in Canada, then you may well be a resident in fact.

If you are concerned that you or a family member who you believed to be non-resident, may be either a deemed resident or a resident in fact, I strongly urge you to consult a Chartered Accountant to determine what your situation is and how to deal with it. Don't wait for a Revenue Canada auditor to knock at your door.

This column has not dealt with all of the issues dealing with rental income for non-residents or all of the issues dealing with "deemed residents" and "residents in fact". This can be a very complex area with many traps for the unwary. If you think these matters may affect you or a member of your family, I urge you to seek the advice of a Chartered Accountant as soon as possible.❑

About the author: ***Richard K. Acton***, F.C.A. is with Acton Gunderson Chartered Accountants. He can be reached at (604) 734-4871 or fax: (604) 734-9221.

佳年旅館
the Grange
APARTMENT / HOTEL
165 Grange Ave., Toronto, Ont. M5T 2V5
Tel: (416) 603-7700
Fax: (416) 603-9977
Downtown Toronto
in the Heart of Chinatown
位于唐人街市中心
Minutes from the CN Tower, SkyDome,
Metro Toronto Convention Centre
and the
Canadian National Exhibition
舉步可達商業中心
Steps to Public Transit
Comfortable Studio Rooms with Kitchenette, 4 pc Bath,
Colour Cable TV, Telephone, Airconditioning and
Laundry Room on Every Floor
Parking Available
Economical Rates
Major Credit Cards Accepted
Mandarin and Cantonese Staff
經濟實惠 國粵語服務
Business and Tour Groups Welcome
Ask about our Tour, Dinner & Show
Packages
歡迎商業或旅游團
Toll Free 1 (800) 567-1893

The strange (but true) life of DTP in 1995

By Gordon Pritchard

It has been observed by several pun dits that we don't see things as they are - we see things as we are. And so it is for our understanding of the evolution/transformation of the business of desktop publishing (DTP). Here are some observations - with a dash of vinegar - you may find of interest, from the viewpoint of one who began their career during the days when typesetting was done by casting molten lead in brass casts (1971!). Heaven forbid you should ask for text to be created in a size that was not available from a shop's existing casts.

The brief (secret) history of DTP

The birth of desktop publishing was an accident that ended up changing not just publishing, but our world. Its history is about to repeat.

In 1984, Apple Computer, in trying to find a marketing edge that would allow them to sell computers against IBM, brought to market a computer system which capitalized on a key, revolutionary, concept that the Xerox Corporation didn't realize that they had discovered. Xerox, several years earlier, had developed a product called the Xerox Star publishing system, it was large (filled an average office) and expensive ($125,000 in 1979 dollars). Essentially it simply integrated a computer, black and white video display, something called a mouse(!), and a laser printer to produce original documents. The system used an interface that made use of a windowing, office environment analogy called a 'desktop' which any Apple Mac computer user today would instantly recognize. The concept that Xerox didn't notice was that managers who depended on information needed to process and publish it themselves - preferably on their desktop. They needed to control the publishing of information. But because managers were not interested in learning arcane programming codes - that was the responsibility of MIS departments using huge mainframe (IBM) systems. Apple simply thought that a computer that was easy to use and that mimicked the familiar tools typically found in an office should be well received and thus provide a kind of Trojan horse with which they could sell into corporate America. Apple's implementation of Xerox's concept coupled with the PostScript language introduced in 1985 resulted not only in a revolution in corporate publishing, but the entire graphic arts industry. It even (some feel) resulted in a political revolution. The breakup of the Soviet Union a few years later. Why? Because the infrastructure of the Soviet system only worked if access to and the publishing of information could be controlled by a single central authority - the government - somewhat like the MIS departments of the old corporate world. With a DTP system and a fax machine, any citizen could receive and publish information themselves. Now think, what government today exists on a foundation of strict, controlled, access and distribution of information? Hint: they serve over a billion too. And in 1995, you don't even need fax paper, fax machine, or even a laser printer to (possibly) achieve the same result that occurred in the Soviet Union.

A few milestone events of '95 - or - the future ain't what it used to be.

First a brief story. On New Year's Eve, December 31, 1999, many people around the world will celebrate the turn of the millennium - the change from the 20th to the 21st Century. Unfortunately their celebrations will occur one year too soon, since the event doesn't actually begin until January 1, 2001. On the other hand, you could say that the turn of millennium has already happened - because a clerical error made while revising our calendar during the Middle Ages effectively meant that Christ was born between four and seven B.C. (before Christ!). Strange, isn't it, how a seemingly simple event (like counting years, adding one after the other) can evolve, over time, in a very peculiar, even nonsensical fashion, to produce the situation and effects that today, we so easily accept as normal.

- We marked the 10th Anniversary of the invention of desktop publishing. In January, 1985, it was little more than an idea. Today almost all publishing of printed documents - newspapers, magazines, advertising is done 'from the desktop.' It has become the prepress standard.

- Windows '95 was introduced - which some wags described as the one billion dollar introduction of a ten year old technology layered onto a fifteen year old platform. 'Those who do not know the past are condemned to repeat it.'

- In 1995 everyone learned the word 'paradigm' - then just as quickly tried to avoid using it.

- FM/stochastic halftoning was still wobbling on the court - suffering from a severe lack of trade interest, technological support, and brutal overpricing. Along with other benefits, this potentially revolutionary technology allows low resolution imagesetters to outperform their higher resolution (read: higher priced and/or profit margined) in terms of image detail and quality. Low resolution imagesetters are both easier to manufacture and more affordable. It is interesting to note that it is actually a reintroduction of processes initially popularized by M.S. Bartlett of Cambridge University in 1955(!). It's also kind of interesting that some of the problems that I was faced with when I was using it in 1971 are still there today - it's just that the excuses I dealt with then were understandable given the state of technology at the time.

- Pantone Inc. introduced the Hexachrome six colour process. Judging by all the brochures that I've seen, by both Pantone and other companies who are using it - you can now finally achieve weird colour effects on expensive presses - if your prepress service provider wants to dump whatever proofing system they're currently using and invests in the only one that is Pantone's approved. I think I'll stay with the old fashioned 5 colour process that provides extended colour gamut for a closer match to colours not within the range of normal CMYK printing. It's been around for at least 20 years that I know of - and probably longer. An extra benefit of the old workhorse is that on a six colour press you still have an ink unit available for a varnish plate.

- Printers became service bureaus, prepress shops became service bureaus, and with the '95 introduction by Polaroid of their dry, processor-free film technology aimed at the non-trade market - ad agencies will finally be able to become service bureaus.

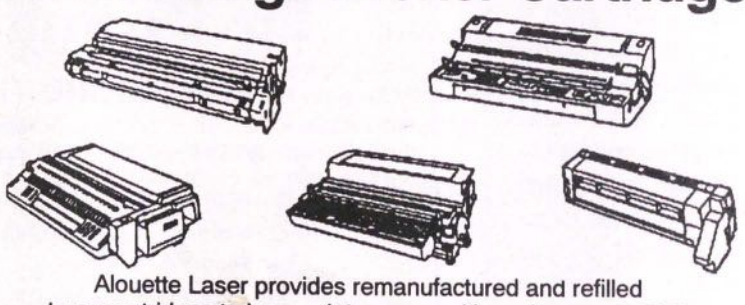
- Service bureaus scratched their collective heads in wonder.

- 1995 saw the real public introduction of the Internet, a technology/system which effectively does away with the need for the printed 'ink on paper' document when conveying information. As a result it was the only technology that managed to generate more ink on paper than the launch of Windows '95. The Internet has inverted the paradigm (darn, I used that word) that the publishing industry has been following since

Does Your Office have a Recycling Program?

Conserve our environment and save $$$ at the same time

Use Recharged Toner Cartridges



Alouette Laser provides remanufactured and refilled toner cartridges to laser printer users with savings up to 60%

100% Money Back Guarantee

We also carry other toners, developers & drum units.
Cartridges are tested and completely disassembled when recharged
We also recharge cartridges for:

Photocopiers • Canon Personal Copier • Sharp Z-series Copier • Panasonic FP820
Laser Fax Machines
Laser Printers • HP Laser Jet I, II, IIP, III, • IIIP, IIID, IIIsi, IV • Apple • Canon • Brother • IBM • QMS • NEC • **and more!**

Onsite Cleaning Service — Rebuilt Fuser Assemblies

FREE PICK-UP AND DELIVERY IN GREATER VANCOUVER

Alouette LASER PRODUCTS INC.
114-3070 Norland Ave. Burnaby, B.C.

Call Today
291-8442
Fax: 291-8435

Gutenberg, in 1436, made use of an even older Chinese idea. The paradigm (darn, I used it again) of first you publish, then you distribute became instead: first you distribute (via the Internet) then you publish (at the receivers end on their system - video display or print). One possible result is that, in the future, fewer books will be printed (consuming valuable trees, paper, ink, landfill, etc.) that people aren't interested in buying (or keeping).

- The Information Highway became the Information Hypeway and then if your were caught using any term that was sanctioned in the popular press you ran the risk of being 'flamed as a newbie.'

- The Internet meant that a 12 year old boy in Atlanta Ga. could create a million dollar-plus business from his bedroom because on the Internet we all have potentially the same virtual presence. A twelve year old kid or General Motors is the same screen size on the 'Net.

- The developers of Netscape - a World Wide Web browser program - accidently found computerdom's Holy Grail: a universal, cross platform interface that transparently allowed an Internaut to access for file uploading or downloading, anywhere in the world, in any format - known or unknown - compatible or not. This is something that even people who share the same computer can have a problem with. Of course most people didn't notice what had happened - but luckily the Netscape developers got rich anyway.

- Canada Post became toast - for delivery of any document that can be digitally encoded. This is the fate that all postal systems will have to deal with as they lose carrying rights to documents that can be sent via the Internet.

- Canada Post ever quick to respond to customer needs immediately answered the Internet threat by publishing a brochure entitled 'Remote Desktop Publishing.' In it they promote the idea that 'having your newsletter produced, printed and mailed by Canada Post saves you tens of thousands of dollars' since 'getting designers, printers, and mailing houses to meet your budget and deadline constraints is a struggle.' You might want to snail mail Government Services minister David Dingwall your appreciation for the opportunity to compete for the decreasing print market against your tax subsidized Federal Government.

- Phone companies tried to understand how their carefully constructed EMail system was being lost to the anarchy of the Internet. In Alberta, the phone company quickly countered the threat by delivering television programming in competition to the local cable company.

- The first practical, targeted to the amateur market, digital camera: the Chinon ES 3000 shipped. Chinon figures that there are enough grannys and grandpas with computer systems and digital imaging technologies that want to see snaps of their grandchildren using those systems to make for a realistic, profitable market.

- Of course Chinon is right - folks over the age of 50 are statistically, the second largest Internet (i.e. computer savvy) user group. The first, of course, being 16 year old boys with over active hormones.

- Digital photography, at the professional end, has finally achieved the quality level potential associated with the hundred year old traditional analogue film method. No more environmental penalty because of wasted film and chemistry if photographers and clients reject a few images.

- Digital presses were all the news a graphic arts trade shows. They allow 'on demand' colour printing for short run lengths, typically less than a thousand copies. Again the negative impact on the environment of traditional printing is lessened: no film, no processing chemistry, and reusable imaging plates.

- The TopFont system formerly debuted in Vancouver. This cool software has two intriguing aspects. First it creates an Adobe Type One PostScript printer font - on the fly - for Chinese desktop publishing application. Neat trick when you consider that to do Chinese language DTP you have to deal with fonts that often contain between 3,000 and 13,000 characters per style! Also, typical (expensive) commercial fonts are often built into a dedicated imagesetter or printer serial code copy-protected so that they cannot be used on other printers. A second aspect is that mainland Chinese DTP artists can now finally use off the shelf (uncopy-protected) North American software rather than the chaos of dongle protected localized applications.

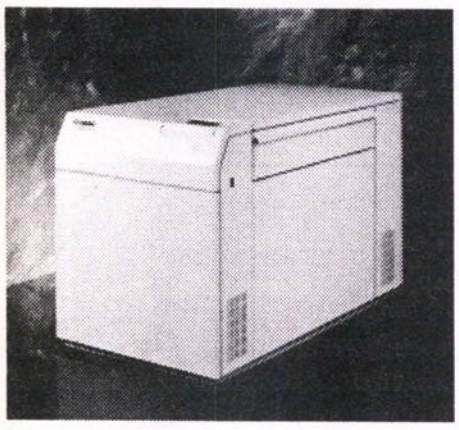
We live in interesting times indeed. ❑

About the author: ***Gordon Pritchard*** *is with the Laser's Edge Company, he can be reached at phone: (604) 662-3774 or e-mail: gordo@le.mnis.com*

GIGO: Gems in, Gems out.

The Secrets of Service Bureau Success

You've stayed up till 3:00 a.m. for the whole week, skipped lunch and dinner, and still don't know the score of last night's Canucks game; but it was worth it. Your twelve page project is finally ready for the service bureau, just in time for your client's deadline. Too bad you forgot to include the company's logo on the Syquest. That'll cost you a day on the press, hundreds of dollars, and perhaps a lucrative client. Ouch!



The Linotronic-Hell Herkules imagesetter can image film up to 21 by 29 inches.

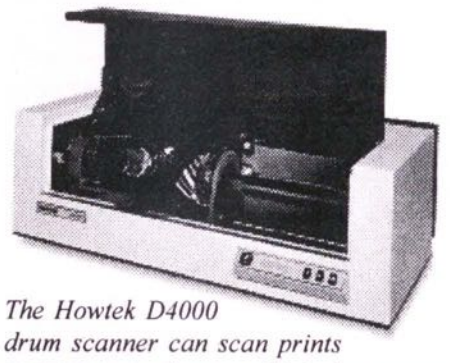
This scenario will sound familiar to many new to the ubiquitous industry of "desktop publishing." That's what happens when a ten year old industry collides with the 500 year old traditions of print. It is the purpose of the service bureau to help soften that blow and prevent the catastrophy described above.

The service bureau is the most crucial step in the production process, because that is where your ideas, images, and words become more than magnetic bits of iron on plastic and take on physical form on the way to becoming a finished product. These are the ten most common and important questions asked at the service bureau. The answers will help you avoid most of the problems you are likely to face.

How do I pick the right service bureau?

A good service bureau is one that can do everything you need, when you need it, for as much, or as little, as you're willing to pay. The most basic services to look for would be: colour scanning; optional black and white laser proofing; digital colour proofing; imagesetter (usually called Linotronic) output to paper and film using a true Adobe PostScript Raster Image Processor (RIP); and, when necessary, technical assistance at a reasonable hourly rate. With typical turnaround for film being four to 24 hours, be sure to allow for that time in your production schedule. If there is a premium for fast turnaround (usually four hours or less), allow for that cost in your budget.

What sets the best service bureau apart is, essentially a greater commitment to the industry. Look for new, state



The Howtek D4000 drum scanner can scan prints or transparencies over 10 inches square with a resolution of 4000 dpi.

of the art imagesetters, computers, scanners, and high quality colour proofing systems all connected using a solid high-speed network. These places will likely offer additional services such as colour trapping, high resolution drum scanning and imposition of large film jobs. They will usually have more output options, such as large colour posters, short run colour printing, 35 mm film recorders, and large format film.

What's the best way to set up my files?

Once you've found your service bureau, you need to make sure that your

Linoplus
Service Bureau/Chinese files output center
四色菲林分色/輸出 Colour Separetion/Output
印前服務 Pre-Press Services
翻譯 Translation
中文 輸出 服務中心
支援 Mac/PC 中系統 System 7.1
scitex
Imagesetting Linotype-Hell® 排照機 350 lpi
超高解像四色分色菲林輸出
四色 打稿 環保!
No Chemical Developer needed!
DUPONT Overlay proofing System
CMYK
AGFA Agfa
scitex 掃描機 SCANNING
Adobe 檢定及認可
支援 優質中文字庫 Monotype® 11 typefaces
優優優優優優優優優優
604-879-6603

files are ready to output. First, find out which applications and versions they support. All worthy service bureaus will support PageMaker, QuarkXPress, Illustrator, FreeHand, and Photoshop on the Macintosh. If you're using Windows, it is crucial that your service bureau run such files on Windows systems, instead of a Macintosh. Any decent service bureau running Windows will support all the above programs, along with CorelDraw.

Since your service bureau is producing your output on a PostScript device, try to use EPS or TIFF as your primary graphics format when importing graphics in your layout. Both of these formats are optimized to print best to PostScript devices. Remember to send a copy of all your placed graphics with the output file. If necessary, most service bureaus offer file conversions between most popular formats, usually charged on an hourly basis.

If your program isn't supported, or if you feel capable, you might try printing a PostScript file to disk, which is possible from every Macintosh and Windows program. Almost all service bureaus love PostScript files and may offer a discount, since they are less work to output. Be sure you understand the policy of PostScript files, though. Most can only send the file blindly to the imagesetter, so if it doesn't come out right, you could still be charged for the output. PostScript files are not for the uninitiated or faint of heart.

How can I avoid font problems?

Easily half of the problems encountered with service bureaus involve fonts, or rather, the lack of them. While all major graphics applications will warn the operator that a file uses fonts not installed on the computer used to output that file, most can't look at the fonts used in the graphic images placed into that file. Those fonts will usually print out as Courier, if at all. Worse yet are the files that

Warren Denny DIGITAL IMAGING
Scanning • OCR • Digital Photo Restoration and Manipulation • We will Output Your Files
We Print to Continuous Tone Film – 35 mm • 4 x 5 – Slides or Negatives
Show Special
35 mm Slides $4.95 ea
Must be from a presentation program, ready for imaging, Min. Qty 20
604-737-2133
FAX 604-737-7311 • EMail denny@infomatch.com

WYSIWYG PREPRESS
Find out why
organizations like Beautiful British Columbia Magazine trust WYSIWYG
- 4 hour turnaround
- mac & pc files welcome
- project co-ordination
- bulletin board system
- film output to 5080 dpi / 350 lpi
- drum scanning
- typesetting services
- stochastic screening
- imposition & punching
- photo editing & manipulation
- short run colour

WYSIWYG (wi'zē-wig) acronym: what you see is what you get.
8 a.m. - 11 p.m., Monday - Friday • 10 a.m. - 4 p.m. Saturday
400 West Georgia Street, Vancouver, BC V6B 1Z3 • Phone (604) 684-5466
Fax 684-5465 • Modem 684-8280

Vancouver Service Bureau Directory

Company Name	WYSIWYG Prepress	Behnsen Graphic	ImageLynx Digital	The Graphic Resource Group Ltd	Activ Image Centre	Compu Type Graphics	Vision Presentations Inc.
Address	400 West Georgia St.	1016 Richards St.	225 W. 8th-main floor	1227 Richard St	1375 Marine Dr. W.Van	950 Homer St Van V6B 2W7.	402-611 Alexander St Van
Phone	684-5466	681-7351	873-9952	669-2287	925-1238	689-8410	251-4600
Fax	684-5465	681-6185	873-9962	669-9137		689-8414	251-3600
Modem line #	684-8280		873-9851	call for registration	phone ahead	689-8415	251-2666
Platform							
PC	YES	YES	YES	YES	YES	YES	YES
Mac	YES	YES	YES	YES	YES	YES	YES
File Conversation	YES		YES	YES		YES	
Other			Unix			YES	
Laser							
Output Max. DPI	600		600	1200 X 1200	600 X 600		600
Printer Brand	HP		Laserwriter select(Apple)	LaserMaster	Kodak		QMS
Output Max. Size	11 X 17 bleed		Letter(B&W) Tabloid(color)	12 X 19	11 X 17		11 X 14
Imagesetter							
Max. DPI	5080		4060	N/A		4064	4000 lines (35mm slide)
Brand	Linotype-Hell		Damippon screen, Linotype Hell			Dianippon screen/Agfa Cg9600	8000 line (4X5)
Max. Size	29 X 22		27X39 (inc mark & color tags)			13.5X19.75 / 13X150	
Color Output							
Max. DPI	400	300	400	8000 lines 300 dpi	600 X 600	4064	300
Brand	XEBOX Regal	Tektronix Dye Sublimation	Iris/ Rainbow/ Kodak Fiery	Matrix PCRZI Tektronix	Kodak 1560	Dainippon screen	Tektronix
Type of Printer							
Max. Size	11 X 17-2 sided	Letter	22X22/ 11.9X17.2/ 11X17	135mm/4X5 8.5 X 11	11 X 17	13.5 X 19.75	8.5 X11
Scanning							
Color Max. DPI	4000		6000	2700/slide 300/Flatbed	600 X 600	2400	600
B&W Max. DPI	4000		6000		600 X 600	2400	600
Color Keys							
Type of Color Key	Kodak		Fuji Color Art(+Laminate proof)			3M Color keys	N/A
Regular Turnaround(hr)	4 hrs		8 hrs	24 hrs/3 day	24 hrs (rush available)	As required	24 hrs
Media							
Floppy Disk	YES	YES	YES	YES	YES	YES	YES
5" 1/4 SyQuest	YES	YES	YES		YES	YES	YES
3" 1/2 SyQuest	YES						
Magneto-Optical Disk(230MB)	YES		YES	YES			YES
Tape	YES		YES	EZ-135 SyQuest			
Other	Zip		1.3% Optical, CD, Zip Drive, 650 MB Optical				
Consulting	YES	NO	YES	YES	YES		YES
Training	YES	NO	YES	YES			YES
Design Services	NO	NO	YES	YES	YES	YES	YES
Other Service	Imposition, typesetting, photo editing, film punching, laminates, blue lines, short run color, bindery, trapping	35 mm slide output	Imposition, Tropping, color correction, image manipulation, digital assembly, high speed modems, internet access(ISDN), CD Rom mastering	Multi media production, net page creation, CDI-interactive disk, interactive booth design, PC to video, audio visual services, slide duplication	Image retouching, enhance	Full graphic arts production	Multimedia design & production, web page design & production, multi-image A/V

use fonts not supported by the service bureau. While some graphics programs will allow you to convert the text to curves (so that the computer no longer sees it as text, but as outlines) the most popular page layout programs do not.

Most service bureaus will support Adobe fonts on the Macintosh and CorelDraw fonts in Windows. If your service bureau doesn't directly support the fonts you're using, ask how they wish to handle your situation and develop a solution that respects the font copyright before your deadline. You may also try sending a PostScript file described above, since fonts are converted to PostScript code when you save the file.

How can I be sure I get the right colours?

Thanks to modern electronic publishing, it is now easier, and more affordable than ever, to add colour to your design. Your service bureau can output colour separations from your file as easily as plain black and white, but it introduces a new level of complexity. If you require process colour separations, every image must have its colours defined in CMYK — process cyan, magenta, yellow and black. Scans from the service bureau will probably already be CMYK, but if they're from PhotoCD, clip art, or your own flatbed scanner, they may need to be converted in Photoshop or PhotoPaint.

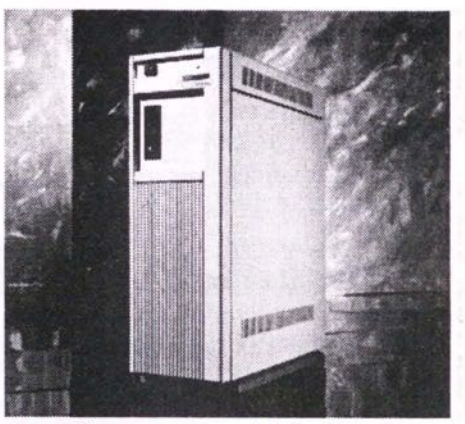
Spot colours can be just as tricky. If you've assigned spot colours in your illustration program and placed them in your layout, it is crucial that the colour names are exactly the same, or the program will see them as different plates. Let your service bureau know when you're using duotones and which colours apply. That way when the colours are printed on top of each other, they mix appropriately.

One last note on colour, and this may seem obvious. You must tell the service bureau that you need separations, and exactly which colours are to print. Don't assume they can tell just by opening your file.

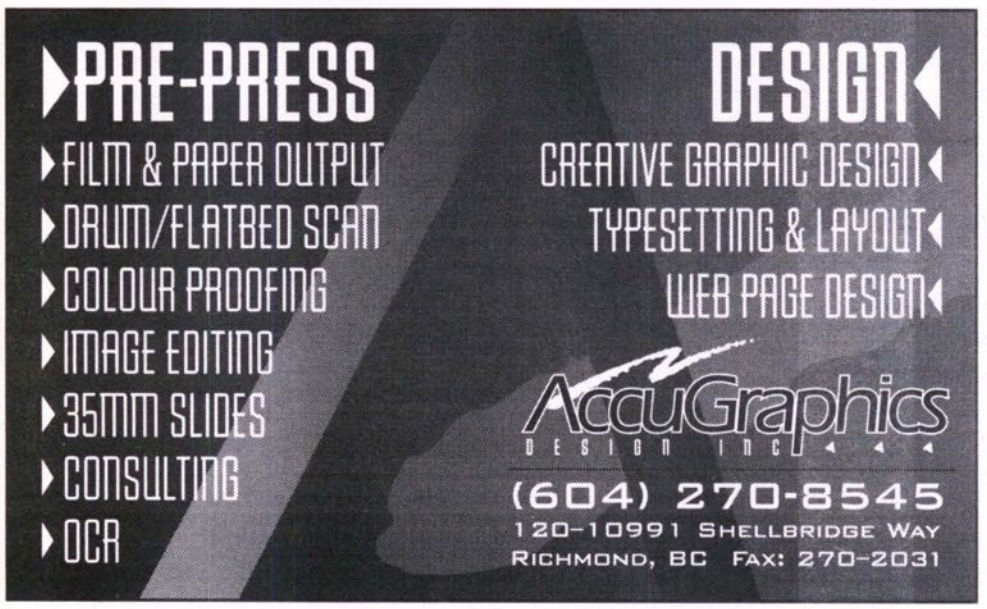
What do I need to know about scanning?

Many service bureaus today offer high quality colour, grayscale, and line art scanning. Drum scanners offer higher resolutions and more accurate colour than flatbeds, but take more time to set up and scan, so choose wisely. If you're getting a colour scan, you'll want the highest resolution appropriate, without making the resulting file unmanageable. Once you know the final size the image will be printed at, and the line screen used, you can use the formula (line screen x 2 x scale%) ÷ 100% = scan resolution (in pixels per inch).

For best results, your originals should be either photographic prints or transparencies. Printed matter, like a magazine cover, will require descreening to eliminate the dot pattern present when printing. Ask about the of scanners they use and how you could best provide your originals.



Look for a genuine Adobe PostScript RIP (raster image processor), such as the RIP 50 from Linotype-Hell.



Vancouver Service Bureau Directory

Company Name	Chroma Tech Inc.	Grafix Xpress Inc.	Key Colour Imaging	COPYCO Service Ltd	ASAP Printing Centre	Image Factory Inc	On Demond Colour
Address	8783 Camble St Van V6P 3J9	120-8211 Ackroyd Rd	15 Victoria	102-1014 Homer St	150-840 Howe St Van	133-1112 Houseshoe Way	1190 Seymour
Phone	324-8324	270-2679	253-8787	684-3655	685-2727	272-5447	669-0038
Fax		270-1594	253-6889	684-3654	685-2773	272-3250	669-6415
Modem line #		270-1335		683-6995		272-5066	YES
Platform							
PC	YES	YES	YES	YES		YES	YES
Mac	YES	YES	YES	YES	YES	YES	YES
File Conversation			YES	YES	YES	YES	YES
Other			SGI				
Laser							
Output Max. DPI		400			600	600	400 X 400
Printer Brand		Xerox			Apple 630	Apple laser 16/600 Ps	Xerox Majestik
Output Max. Size		11 X 17			11 X 17	Legal	11 X 17
Imagesetter			(Film recorder)				
Max. DPI	5000	2400	2032	2540		3386	2400
Brand	Linotype-Hell 930	Agfa	Light Jet	Linotronic		Linotronic 330	Scitex
Max. Size	29 X 44	12	11X14	11.9		12 X 50	19 X 25
Color Output							
Max. DPI		400	400	400	400	400	300
Brand		Xerox majestik 5765	Cannon CLC 700	Xerox regal W/Lyclone Rip	Cannon	Fiery 200/Kodak 1525	TEncad Novajet III
Type of Printer							
Max. Size		11 X 17	11X17	11 X 17	11 X 17	Tabloid	3ft X 10ft
Scanning							
Color Max. DPI	600	1200	5000			5000	400
B&W Max. DPI	600	1200	5000	600	400-high speed doc. imaging	1200	400
Color Keys							
Type of Color Key	NAPS	3 M				3M	Fuji overlays & Fuji laminate
Regular Turnaround(hr)	1 day	10 hrs	4-72 hrs	4 hrs - no rush rates		8 hrs	20 X 24
Media							
Floppy Disk	YES	YES	YES	YES	YES	YES	YES
5" 1/4 SyQuest	YES	YES	YES	YES	YES	YES	YES
3" 1/2 SyQuest					YES		YES
Magneto-Optical Disk(230MB)	YES					YES	YES
Tape			YES				Zip
Other				Zip		Berjovilli 90, E-Z dr 135 SyQuet 44/88/200	
Consulting	YES	NO	YES	NO	YES	YES	YES
Training	NO	NO	YES	NO	NO	NO	YES
Design Services	YES	YES	YES	NO	YES	YES	YES
Other Service	All prepress including manual table stripping	Printing, copying, inhouse computer rentals	Electrostatic 5" X any langth	Complete photocopying, binding, laminating, golf tips		CD-ROM relording	Offset printing

Since some scans can run a hundred megabytes or more, it would be silly to copy that much information onto your system, just so you can send it back when getting your output. If you won't be modifying the scan (except to scale or crop it in your layout program), you can request an FPO (for position only) file. This is a low resolution version that you can treat just like it's big brother, without working with huge, slow files. Just tell the service bureau to link to high resolution images when getting your output, and they'll take care of the rest. Most service bureaus don't charge anything for this, since it saves them backing up huge files and virtually guarantees that you'll be back.

What's this "line screen" thing?

The most overlooked, yet vital piece of information is your printer's line screen requirements. Line screen, in lines per inch, is a measure of how close together the printed dots that simulate colour shades are printed. Line screen is usually determined by your printer as a function of the press used and the stock you are printing on. Line screens below 100 lpi can be output at 1270 dots per inch on an imagesetter without sacrificing quality to save money. For images above 100 lpi you'll need to output at 2540 dpi or higher. An emerging option is stochastic screening, which can often produce stunning results at lower resolutions, although not all printers currently support this capability.

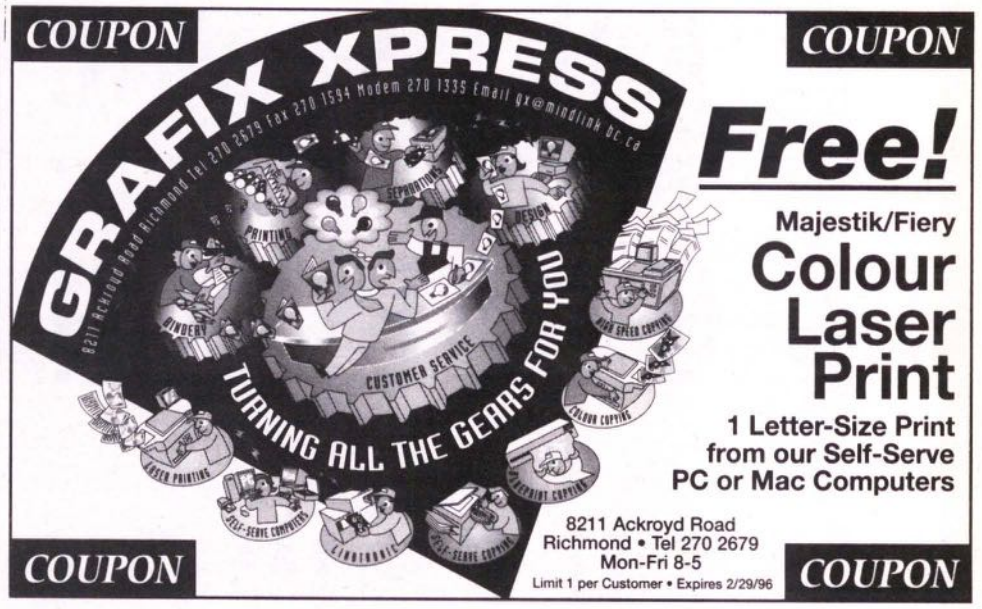
Just as important as line screen, when outputting to film, are emulsion options. Do you want the film positive or negative? Emulsion up or down? Again, don't ignore these. Work with your service bureau and printer to find out what you need.

Should I get proofs?

Today's service bureaus offer a wealth of proofing options, to save a few bucks to a few hundred on output, or to save a few thousand on printing. Your service bureau can run a test of your file to a black and white laser printer before going to high resolution paper or film. For colour work, you should check proofs run to a calibrated digital proof-

Color Laser Printing: Mac or PC files.
Image Editing / Retouching.
Photo Restoration

Activ Image Centre, 1375 Marine Dr.
West Vancouver, BC V7T 1B6
604-925-1238



Vancouver Service Bureau Directory

Company Name	Mountain Colors Image Centre	Dominion Blue Reprographics	LINOPLUS	LASER'S EDGE	T.R. Trades Reprographics Ltd	AccuGraphics
Address	2-136 W 3nd St North Van	1409 West Pender St Van	15 East Broadway	100-1112 West Pender St	1744 West 4th Ave. Van	120-10991 Shellbridge Way
Phone	986-0308	681-7504	879-6603	662-3774	736-4571	270-8545
Fax	986-0328	681-6618	879-8499	681-2300	736-5689	270-2031
Modem line #		681-7438	879-8493	662-8683		270-4940
Platform						
PC	YES	YES	YES	YES	YES	YES
Mac	YES	YES	YES	YES	YES	YES
File Conversation			YES	YES		YES
Other						
Laser						
Output Max. DPI	600	600	N/A	800	400	600
Printer Brand	Micro Laser Pro	Docutech Electronic Publisher		Data Products	Cannon / Xerox 3386	QMS
Output Max. Size	Letter	11 X 17 / A3		11 X 17	11 X 17 / 36 X 16	Tabloid
Imagesetter						
Max. DPI			4060	3600	N/A	4064
Brand			Linotype	Agfa Selectset 7000		DS1035 (Dainippon Screen)Drum
Max. Size			30 X 20	22 X 25.7		13.5 X 20
Color Output						
Max. DPI	400/300/300	400		300	Cannon case/large format ink jet	600
Brand	Xerox / Rasterops / LaserMaster	Cyclone		Way Big	HP / Cannon	Apple color laserwriter 12/600
Type of Printer						
Max. Size	11X17/8X11/34X100	11 X 17 / A3		36X108	11.X17 / 36 X 16	Legal
Scanning						
Color Max. DPI	2000	600	4000	6000	400	2700(Drum) 4800(Flated)
B&W Max. DPI	2000	400	4000	6000	400	2700(Drum) 4800(Flated)
Color Keys						
Type of Color Key			Overlay	3 M		Overlay
Regular Turnaround(hr)	24 hrs	immediate to 48 hrs	4 hrs	<12 hrs	8 hrs	6 hrs
Media						
Floppy Disk	YES	YES	YES	YES	YES	YES
5" 1/4 SyQuest	YES	YES	YES	YES	YES	YES
3" 1/2 SyQuest				YES		YES
Magneto-Optical Disk(230MB)				YES		YES
Tape		YES		Bernoulli, 10 mega Zip		E-Z, DAT
Other	Bervoulli 90	CD ROM	Zip Drive		Zip Drive	
Consulting	YES		YES	YES	YES	YES
Training	YES			YES	NO	YES
Design Services	YES		YES	NO	NO	YES
Other Service	Kodak photo CD	Color output, megachrome color digital prints, drymounting, lamination & finishing, B/W photographic services (PMT's etc.), bindery.	Supports Chinese on both PCs and Macs.	Imposition, trapping, production, retouching, short run color, line screen convension, BM match print caminate proofing		OCR / translations

Note: *Vancouver Service Bureau Listing from information faxed back. Some omissions due to insufficient data.*

ing system. Calibration being the operative word, so ask them to demonstrate their calibration. The options are dye sublimation, continuous tone laser, or ink jet printers. This is especially important for process colour work, since no computer monitor can accurately simulate the process colour environment.

Many printers working in process colours will require a press proof made from the very film they will use to make your printing plates. It's the only way to be sure that the colour on the press is accurate. You can choose from colour overlays and laminates.

How can I send my files to the service bureau?

Your file is all set up, the colours are properly defined, and your order form is all filled out in triplicate and notarized by the Queen. All that's left is to get the file to your service bureau. Due to the size of graphic and publication files, floppy disks are often impractical. A good investment at this stage would be a high capacity removable disk drive. Most service bureaus support Syquest, magneto optical, Iomega Zip drives, and a host of other options.

Thanks to affordable, fast modems and the Internet, many service bureaus allow you to send your files electronically. Some offer a free, direct bulletin-board-system with speeds up to 28.8 kilobytes per second. Your service bureau might even have presence on the Internet, allowing you to upload directly to their server. You will need to fax a completed order form with specific details on what your file is called and how it was sent.

If none of these options appeals to you, and your files are small enough, you could send them on floppy disks. To make the files more manageable there are several shareware and commercial file compression programs available. The best of these are Stuffit Deluxe and CompactPro for the Macintosh and PKZip for DOS.

Can I be sure I've done everything right?

If you've followed all the above instructions, your files should be RIP ready. You might want to try simulating the prepress environment to make sure that what you see is what you get.

Copy the files you've just backed up to a new, empty directory on your hard drive, and work only from those files. Follow the instructions you've written on the form and print the file exactly as needed, including colour separations. If your printer can't handle the size of your image, scale it down so that it fits on the page (crop and registration marks add about one inch). If you have a PostScript laser printer you can test PostScript files by downloading them directly. Look at each page, especially if you're using process colours. If an image printed only on the black plate when you wanted colour, it may be an RGB image.

This may seem like a waste of time and paper, but it could cost you more time and money if anything goes wrong later.

Is that it?

These are not so much rules as rules-of-thumb. Each service bureau offers different services and will have specific requests to make from their clients. These steps will seem overwhelming if you're new to the service bureau experience, but become second nature with experience and determination.

Ultimately, you want to deal with a service bureau that treats you with respect and that you can trust do it right the first time, every time. If you've filled out your order form, provided laser proofs as insurance, and done everything listed here, then there's little to prevent your experiences with your service bureau from being pleasant and mutually beneficial. ❑

This article is compiled by the team at WYSIWYG Prepress, reach them at 604-684-5466.

THIS YEAR

Internet access from MIND LINK! opens up
a new world of knowledge and adventure.

GIVE THEM

Surf the Web. Send e-mail in a flash.
Download software. All in one convenient package.

THE WORLD*

Give them a gift they'll really use.
At a price you'll really like. (Starting at $10!)

*...AND WE'LL GIVE YOU A FREE MUG (offer open to MIND LINK! members only)

MIND LINK!

phone: 668 5000
fax: 668 5028
e-mail: info@mindlink.net
web: http://www.mindlink.net

Quality Internet Access & Support. Since 1986.

Digital and ISDN modems

By Sean Elrington

Over the past year or so things have gotten rather complex when it comes to modems. Many datacom vendors are now promoting 'digital modems' with their routers and other remote access equipment. What is a 'digital modem'? Unfortunately, the term 'digital modem' can refer to three different things; a CSU/DSU, an ISDN TA/ NT1 or a modem capable of receiving digital bits in and out with the analog modulation/demodulation being done internally.

A bit confused? Hang in there.

A true analog modem can only run up to 33,600 bits per second over ordinary telephone lines. Dedicated or switched circuits running faster than that will typically use a Channel Service Unit / Digital Service Unit (CSU/DSU) on the line. These units power the line and look much like an ordinary data centre modem. Because the link is digital from end to end, there is no need for an analog signal so CSU/DSUs are not really true modems. Nevertheless, many people do refer to them as 'digital modems'.

An ISDN (Integrated Services Digital Network) TA and NT1 are often combined into one unit and sometimes called a 'digital modem'. The NT1 (NetworkTermination Unit One) provides power to the line and takes the 2-wire ISDN line in through a 'U' interface and converts it into a 4-wire line.

GO ONLINE WITH LYNX
UNLIMITED ACCESS
& INSTANT ACCOUNT ACTIVATION

FLAT RATE NO HOURLY CHARGES
ONLY $20.00 PER MONTH
PROFESSIONAL WEB PAGE DESIGN
SLIP & PPP CONNECTION
FULL NEWS FEED
ALL 28.8 K LINES
T1 CONNECTION

ASK FOR OUR STUDENT DISCOUNT PACKAGE
PUT YOUR BUSINESS ON THE NET!
LYNX INTERNET
Makes It So Easy!
Phone: 331-2511 Fax : 331-2522
E-Mail : info@lynx.bc.ca

ZED DATA SYSTEMS CORP.
THE NETWORK EXPERTS
(604) 473-9331

Buying a router to connect your LAN to the Internet?
Call us. We know routers.....

Telebit's LS 2PT router
2 a/sync ports
1 Ethernet port 1 LocalTalk port
routes IP/IPX/AppleTalk
dial-on-demand routing

$1599

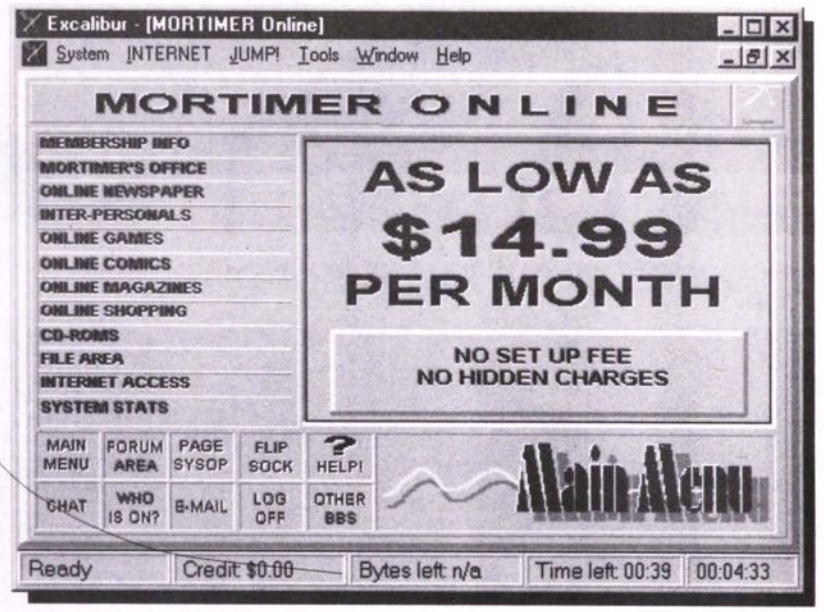
TELEBIT

*sales * rentals * service
ZED Data Systems
info@zed.ca http://www.zed.ca

FULL T1 INTERNET CONNECTION
ONE HOUR FREE TRIAL
FREE PERSONAL WEB PAGES

MORTIMER ONLINE!
A New World of Information, Ideas and People

NEW FEATURE
Log onto other Excalibur systems around the world using the Internet



→ Windows Interface
→ Point & Click
→ Netscape, Eudora
→ Email, Newsgroups
→ IRC, FTP, etc.

Modem 294-2955
Voice 294-2995
info@mortimer.com
http://www.mortimer.com

120 - 2465 Beta Avenue Burnaby BC V5C 5N1

TAKING CARE OF COMTEX BUSINESS

WINPACK 95

Allows you to JUMP Start your Windows® 95 applications!

No doubt about it, Windows® 95 --Microsoft's newest 32-bit operating system, will change the way computers are used ! To maximize the advanced features of its new 32-bit applications, Windows® 95 will demand the ultimate from your hardware. COMTEX has met the challenge with their **Winpack95-55CMS.**

The winner of the COMPUTER PAPER Editor's Choice for Pentium Powerhouse (August 1995) has added Microsoft's Windows®95 and a host of multi-media goodies to produce the ultimate in Pentium performance!

BENCHMARK TESTS — COMPUTER PAPER — Editor's CHOICE

WINNER
August 1995

With Intel's 133 MHz Pentium CPU added to our U.S. made SUPER TRITON PCI mother-board with pipeline burst synchronous cache, it blows the doors off the competition. Adding a multimedia PCI video card with 2 MB VRAM and a speedy 1.6 GB Mode 4E-IDE hard drive gives you speed to burn. We finish the system off with a Quad speed CD-ROM drive, 16-bit sound card and a 14,400 bps voice/ fax/ data modem to make sure that the COMTEX **Winpack95-55CMS leads the charge in the Windows® 95 hardware sweepstakes.**

Check our web page at: http://www.comtexmicro.com

Call us for your nearest COMTEX's Dealer

COMTEX BUSINESS — OVER 10 YEARS OF EXCELLENCE — SINCE 1983

intel inside pentium

Designed for Microsoft Windows 95

COMTEX COMPUTERS — 3 YEARS

CSA ENTIRE SYSTEM — ASSEMBLED IN CANADA

All Registered Trademarks and other Trademarks are of their respective Companies.
The Intel Inside Logo is a trademark of Intel Corporation.
Microsoft, MS-DOS and Windows are either registered trademarks or trademarks of Microsoft Corp. in the United States and / or other countries.

COMTEX MICRO SYSTEMS INC.

Head Office
#100-13751 Mayfield Place
Richmond, British Columbia,
Canada V6V 2G9
Tel:(604) 273-8088
Fax: (604) 278-2818

Branch Office
#7-3610 29th Street N.E.
Calgary, Alberta,
Canada T1Y 5Z7
Tel: (403) 250-3386
Fax: (403) 250-8092

0559075299-L2A5N8-BR01

CompuServe®

PO BOX 1051 STN MAIN
FORT ERIE ON L2A 6K7

Get 10 free hours online (including the Internet!) with CompuServe.

Just mail this card, or call 1-800-487-0952 and ask for the *Computer Player* representative.

Name _____ Company _____

Address _____

City, Province _____ Postal Code _____

Daytime Phone _____ Evening Phone _____

☐ French ☐ English

☐ Windows ☐ Mac ☐ Other _____

☐ 3.5" Disk ☐ CD-ROM

One free membership per household, please.

CMPLY 2/96

CompuServe

AN H&R BLOCK COMPANY

The output to the TA goes through an 'S/T' bus. If you buy a device with an 'S/T' interface you will also need to buy an external NT1. If you are buying a router with a 'U' interface then you can usually just plug the phone line directly into it.

The Terminal Adapter (TA) takes the 4-wire line and connects it to a router or other communications equipment. The TA also performs some control functions on the line such as 'bonding' the two 64,000 bit per seconds ISDN B channels into one 128,000 bits per second channel. The TA and NT1 are often combined into one unit and sometimes even incorporated into a router.

Most recently, the term 'digital modem' has come to mean a modem which receives digital input and also has digital output. A brief digital-analog-digital conversion is done within the modem but the output is digital. A normal analog modem typically receives digital input and outputs an analog wave.

Why would someone require such a modem? Imagine that you are an Internet Service Provider (ISP) with a mix of clients. Some call in digitally, using dedicated lines or ISDN, and some customers call in using analog modems. You could run separate modem pools with TA/ NT1s, CSU/DSUs and analog modems but this is rather cumbersome. Also, you may have chosen to consolidate all of your incoming calls onto a high bandwidth digital line like a T1.

Handling your digital calls is straightforward enough, but what about your analog dial-up customers? The modem at the customer's end is encoding the original bit stream from their computer in an analog wave and sending it over the phone line. At the telephone switch the call becomes re-digitized and it remains digital thereafter as it travels through the phone system and is delivered to your ISP via a digital phone line like a T1 link. In order to 'decode' the call a modem must turn the phone company's digital bit stream into an analog signal and then re-digitize it into a form that the router can use. A digital modem does this conversion internally resulting in a digital-in, digital-out process.

Another common related phrase is 'ISDN modem'. This typically refers to a TA/NT1 unit, however some vendors have started to put both an analog modem and a TA/NT1 in one unit. Some ISPs suggest these unit to their clients because it allows ISPs who can only receive analog calls now, to upgrade to ISDN in the future without their clients having to buy new equipment. It also allows people like telecommuters, who have ISDN residential lines, the ability to dial into bulletin boards and other 'analog only' services. ❑

About the author: ***Sean Elrington*** *is Marketing Manager of ZED Data Systems, he can be reached by SeanE@zed.ca or voice (604) 473-9331.*

CompuServe
gives you the Internet.

[As if our 3,000 online services weren't enough.]

TEN free hours online!

What do you get when you combine the world's largest online service and the vast network of 30 million Internet users? The simplest way to connect to the whole world at once. Because now CompuServe gives you one-stop access to the Internet. And to prove it's the easiest way to connect to people and information worldwide, we'll give you ten free hours of exploration time.

With a membership to CompuServe, you get thousands of engaging services. Like *Macleans* Online, *Canadian Business* Online Forum, stock quotes, Air Canada, CNN Online, Roger Ebert's Movie Reviews, *People* Magazine Daily Edition, *Rolling Stone* Online, *Money* Magazine Online, *Entrepreneur*, *U.S. News & World Report*, The Weather Channel Forum, and professional and technical forums. You also get all the Internet extras: the World Wide Web, USENET, FTP, and e-mail.

With more to offer and reduced hourly rates, you get the best online value from CompuServe. Call the *Computer Player* representative at 1-800-487-0952 (or go to www.compuserve.com if you're already wired) to receive:

1. A free membership kit including CompuServe Information Manager software for DOS, Macintosh, Windows, or OS/2 (and it's available on CD-ROM too!).
2. One free month of CompuServe membership (a $9.95 U.S. or about $14.00 CDN value).
3. Five free hours each month, including the Internet. Additional online time is now only $2.95 U.S. or about $4.20 CDN per hour!
4. BONUS! Five additional hours online during your first month of membership for a total of ten free hours.

CompuServe
AN H&R BLOCK COMPANY

Computer Conferencing on the MBONE

By Andrew Daviel

You may have heard of the Mbone and wondered what it was. Several rock concerts have been broadcasted on this medium, including one from the Rolling Stones. NASA missions are routinely sent over the Mbone, as are Internet events such as the WWW and IETF conferences. The media always says that it requires "special equipment" to receive these transmissions. This "special equipment" is merely a computer with a modern UNIX operating system, such as a PC costing $2500 and running FreeBSD, NetBSD or Linux. A soundcard is required to receive audio, and a TV camera and video grabber are required to broadcast your own material.

Mbone stands for "multicast backbone". Although LANs such as Ethernet are capable of multicast (transmitting the same packets to multiple destinations), the Internet as a whole currently is not. The way around this is to establish a network of multicast routers around the world, linked by "tunnels". Each multicast data packet has a TTL parameter that controls how far it will travel. Packets with a TTL of 127 will cross the world.

Multicast is similar to the regular Internet protocol, except that it goes to more than one place. A block of ip addresses starting with 224 is set aside for multicast, and each address can have many "ports", so that the address space is quite large, kind of like having a few hundred thousand TV channels. There's a finite bandwidth, though, so there can't currently be more than one or two events with worldwide coverage at the same time.

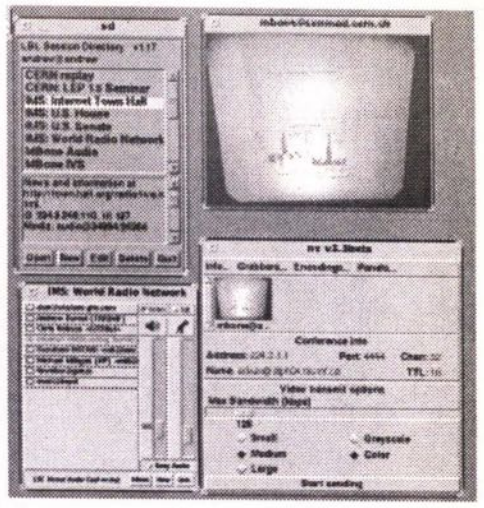
Several applications have been written to use multicast addressing for remote conferencing. These include video, audio and whiteboard tools which allow users at many sites around the world to receive transmissions from a single source. Users can also participate by asking questions or writing on a whiteboard. The tools can also be used point-to-point using regular ip addresses

to link two workstations. For multicast transmissions, they are usually controlled by a session tool, which displays information about available sessions, passing address and port data to the individual tools.

They are quite sophisticated, supporting encryption, control of right-to-talk, and several encoding methods. While available for many flavours of UNIX, including those that run on a PC, they are not yet available for Windows - but with Windows NT and Windows 95 having better Internet support and multitasking, it is surely just a matter of time.

The snapshot shows the session directory tool, an audio tool, and video tool. The video tool can accommodate multiple sources, shown as separate thumbnails. Clicking on the thumbnail produces a larger viewing window.

Normal transmissions use 128kbps for video and 64kbps for audio using



PCM coding. GSM coding can reduce the audio bandwidth to about 10kbps, while the video bandwidth can be reduced by adjusting the transmitted frame rate. Don't expect to see the NASA transmissions through a 28.8 modem, though,

The Mbone is still classed as experimental, so is not available yet from most commercial ISPs, though it is possible to set up your own tunnel from your LAN to a nearby (in Net terms) Mbone router. ❑

For more information about the Mbone, conference tools, mailing lists etc. see http://vancouver-webpages.com/mbone

About the author: ***Andrew Daviel*** *is robotmaster at Vancouver Webpages, he can be reached at e-mail: andrew@vancouver-webpages.com .*

Professionally Designed Web Site on Canada's Largest Business Directory

From $99.00 Annual Fee

The advantages for your business are endless

- Provide information about your products and services
- Publish your catalogues
- Take customer orders and research your market online
- At $99 a year, there are simply no excuses

602•9564

Web Express™

Canada's only national Web site developer

http://web.express.ca/ Tel:1-800-788-4555

Computer Player

For advertising information call (604) 739-8266

or e-mail cp_sales@computer-player.com

SCEPTRE MAKES A MONITOR FOR EVERY APPLICATION, INCLUDING YOURS

11.3"
LCD Monitor

SCEPTRE®

EXCELLENCE FOR ALL THE WORLD TO SEE

SCEPTRE donates a portion of all profits to the Zoological Society of San Diego in support of C.R.E.S., the Center for Reproduction of Endangered Species.

© 1995 SCEPTRE Technologies, Inc. All Rights Reserved. All product and brand names are trademarks or registered trademarks of their respective companies.

*VDSS = Viewable Diagonal Screen Size

Sceptre Technologies' RADIATION FREE LCD Flat Panel Display is both environmentally and user friendly. It offers viewing on flicker-free 10.2" TFT or 11.4" DSTN screen reducing eye fatigue, and lower voltage to lessen the risk of electric shock.

Ergonomically designed the LCD is only 2 inches thick, and weighs a mere 2.8 pounds.... Complete with a 78 inch cord and a detachable, adjustable base the panel can be wall-mounted. By keeping desktops clear of bulky computer equipment the LCD actually improves the work environment.

JANUARY 1994 BYTE BEST OVERALL GENERAL BUSINESS COLOR MONITOR

For the Windows 95 environment Sceptre Technologies, manufacturer of the BYTE BEST COLOR MONITOR --- 1994, offers the WINplay Series of monitors. This new generation of displays are plug and play and DDC 1/2B with a smaller, streamlined footprint. Featuring on-screen display, 32-bit technology, and unparalleled image quality, the WINplay Series is available in all the popular CRT sizes including 14, 15, 17 and 21 inch.

For distribution information, call:

1-800-788-2878

In Canada Call

Jaba System Inc.
(905) 477-6363
(604) 276-9986

In USA Call

Tech Data CORPORATION
1-800-237-8931

INGRAM MICRO
1-800-456-8000

CERTIFIED ISO 9001 MANUFACTURER

Energy Star

Using Internet Applications With Windows 95

Information from Microsoft Corp.

Introduction

Windows 95 provides support for users to access the Internet, regardless of the application or the service provider they choose. Most applications run fine under Windows 95, however some applications use non-standard components and may require special configuration to run correctly under Windows 95.

The purpose of this article is to answer commonly asked questions regarding these applications, provide background regarding Windows 95 support for the Internet, and to inform users how to configure these applications to run correctly under Windows 95.

Can I run Compuserve/Spry Internet in a box, Mosaic, Netscape, etc. with Windows 95?

Yes, all of these applications run with Windows 95. Some applications (listed below), use either non-industry-standard or real-mode components and some configuration is needed.

Can I use my third party browser with Windows 95's own TCP/IP and Winsock?

Yes.

Can I run multiple browsers on my Windows 95 system? Can I run third-party browsers together with Microsoft's own Internet Explorer?

Yes.

Does installing Microsoft's own Internet Explorer overwrite, remove, or disable my existing Internet browser?

No. In some cases, special configuration may be needed.

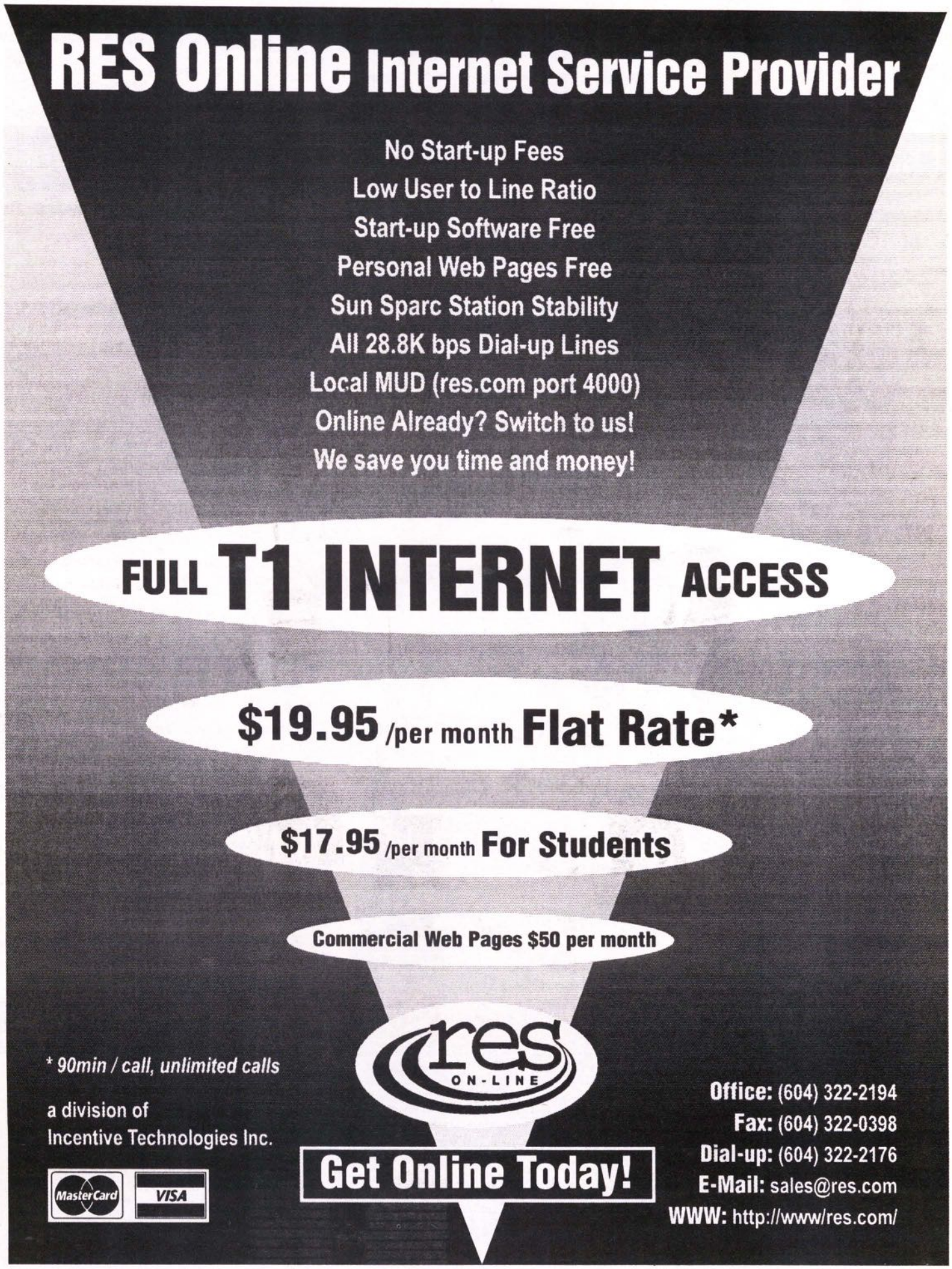
Background

Internet Support in Windows 95

Microsoft Windows 95 provides easy access to the Internet, whether you dial into a commercial Internet provider or you gain access via your corporate network. Windows 95 provides all the "plumbing" you need to tap into the information on the worldwide Internet network. Microsoft is committed to the openness of the Internet and to industry standards, and to making Windows 95 the easiest platform to explore the Internet, regardless of the application or the service provider. Built-in support for TCP/IP, dial-up protocols, such as Point to Point Protocol (PPP) and Serial Line Internet Protocol (SLIP), and Windows Sockets make connecting to the Internet just a mouse-click away.

By providing these services as part of the base operating system, Windows 95 represents a huge step forward over previous versions of Windows. An analogy can be drawn to Windows printer drivers. Prior to Windows, users were forced to go to the vendor of each application to obtain the driver for their specific printer. That driver was specific not only to the printer, but also to the application – a user could not use that driver with another vendor's application. This placed a burden on both the user, who had to find each driver, and also the vendor, who had to develop the driver. By providing printer drivers in Microsoft Windows, both the users and application developers benefited – users could use a single driver for all applications, and application vendors could be free of writing driver-dependent code. Similarly, providing

(Continued on page64)



NPSNET
BC's Premium Internet Service Provider

INTERNET ACCESS $14 per month*

"internet access that makes sense"

Annual Membership
- includes 250 hrs $168.00
- internet Starter Kit and setup fee included

Package Offerings
- one time setup $39.95
- net-start 50 hrs $34.95
- net-plus 500 hrs $324.95

* Based on Annual Membership Subscription, Tax not included

☑ no busy signals
☑ on-site installs and training
☑ direct satellite news feed
☑ WWW home pages

Call now for account activation

Voice 272-2624
Toll-Free 1-800-319-8500
http://www.npsnet.com
info@npsnet.com

Internet Access

$16.95 per month or less

All the time you'll ever need.
some restrictions apply.

Call 257-9400 and we'll connect you today.

We're proud supporters of...
"A portion of your fee is donated to BCCH." Children's Hospital

INTERNET PORTAL

Phone ... 257-9400
Fax 257-9401

Info@portal.ca
http://www.portal.ca

ISP demise greatly exaggerated

By Iain Black

This just in: We're all on a crash course with disaster!

Over the dozen or so years in which I've been deeply entrenched in the computer industry, every type of technology and size of company has been labeled at one time as, ahem, "terminally" ill by outsiders and insiders alike. I've been on both sides of the fence on this one.

During the years where I worked with voracious users of high-end technology, my colleagues and I sat about, waxing on, in our knowledgeable ways, about how "company x" surely won't be in business in a few months or how a particular technology is finished and should let the latest buzz take over. Later, I was an employee who experienced, first-hand, what is likely history's most profound and largest corporate turnaround and restructuring in a little upstart company called IBM which just refused to die. From this I gained a more balanced perspective - and patience - for such predictions.

Thus it was with interest that I listened to academic and industry voices debate what 1996 will hold in store for the Internet and its various players at the Internet World '96 conference in Toronto last mid-January. These conferences usually have speakers who have minor differences on the same general theme or opinion. Indeed, everyone seemed to agree that: i) the Internet is Big and getting BIGGER, ii) the commercialization of the Internet is beyond its adolescence stage and is entering its cantankerous puberty phase and iii) everyone (including the speakers) is having a difficult time keeping up with the speed of change within this phenomena.

However, beyond that, there were some radically different thoughts as to where the Internet is headed and what - or who - the major influences will be in 1996 and 1997.

A few speakers feared the entire collapse of the Internet in 1996, due to the overwhelming growth of the Internet and the inability of the worldwide communications infrastructure to handle the volume of users. Of interest was the consistent disinterest (by all the speakers I heard address the question) in the cable companies coming to participate in the Internet arena. There was a general consensus that no one is a true expert on the Internet as the Internet keeps changing daily.

But the one that caught my attention a little more than the others was the pronouncement by one speaker that all Internet service providers (ISPs) would be out of business by the end of the year. As the owner of an ISP, I certainly stirred in my seat to better hear the details of my demise.

The essence of what the speaker said was that any small ISP would likely not survive the onslaught of the Canadian national providers and the migration of on-line service giants such as CompuServe and America On-line Canada (who, I might tangentially add, had the cultural courtesy to call themselves AOL Canada, with no mention of the actual "A" word). Interestingly enough, she shared the opinion that the arrival of the cable giants to the Internet game was only thought to be really relevant by the cable companies themselves (which drew chuckles from the crowd) and that they would not be any force in the Internet arena for at least 12-36 months, with their role and impact thereafter being questionable.

To be fair to her viewpoint, though, the 1995 acquisitions of a couple of local, established ISPs by a national Internet provider does indicate a fair amount of activity out there. In my humble opinion it represents something other than a carte blanche steam roll of us spirited little guys by the big fellas with some dough to spend.

What has started to happen, and will continue to happen, is a fragmentation (vs a demolition) of a maturing marketplace into 3 distinct classifications:

1. The owners of large networks specifically for the purpose of being in the Internet game.

2. The owners of large networks that figure they want to be in the Internet game, too.

3. The owners of small service providers, owning ranges of sizes of physical networks, with a variety of niche services and connections to offer customers.

What has started to come out is that each of the three groups competes on quite different levels, often for different customers. Not everyone can be the lowest priced player; not everyone wants to be. Much like boxing, I think you'll see pretty intensive heavy weight fighting between the bigger players and continued competition between us smaller welter weights. If I were to make a prediction on ISP survival, I would say that any ISP that cannot fit into one of the above categories will not make it.

But how do the little guys play in the same arena as the big guys?

The same way they always have: by going with their strengths in being more reactive both to the business climate and to customers' needs, by being able to more closely impact customer service and quality control, and most importantly, by demonstrating to customers any additional value they realized as a result of doing business with them.

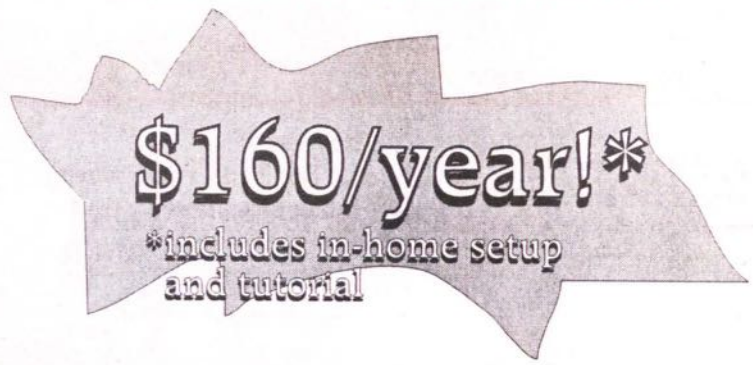
Personally, I think 1996 represents a fabulous opportunity for both the ISPs and our present and potential customers. This evolving marketplace will keep us sharp, focused on defining, developing and delivering the value we bring to our customers through our variety of services and staying acutely aware of who specifically we should target for customers to best create the buyer-seller expectation and relationship.

Given the spirit and history of both small business and small technology-based business in BC, I suspect our customers will continue to have a great selection of avenues onto the Internet for some time yet. ❑

About the author: ***Iain Black*** *is the General Manager of E-Z Net Internet Services Ltd., a Vancouver-based Internet Service Provider with a focus on Small Business, the Family and the "technically challenged". At last check, he was still breathing. He can be reached at (604) 873-8403.*

DIGITAL RAIN ONLINE

YOUR ONE STOP ONLINE SOLUTION



INTERNET:
SLIP/PPP or Terminal Access to the World Wide Web, E-MAIL, FTP, IRC from 2400 - 28.8 bps. PC or MAC. We support your platform!

INTERACTIVE:
Participate in Local Teleconferences, Trivia contests, MatchMaker software. Enter the Quickening, our online, interactive fantasy realm.

MULTIPLAYER GAMES:
Live, interactive, full motion games supporting 4+ players simultaneously. Heretic, Descent, Hexen, CivNet, Doom, Doom2, Doom Ultimate, and Quake when available.

VALUE:
Full Service Internet with a full Service BBS and Entertainment Service. Unix Shell Accounts and Home Pages Available.

#201-12837 76th Avenue, Surrey, B.C.
Voice: 543-3025
For Your Free Trial, Dial Modem: 543-3000
IF LONG DISTANCE, DIAL 668-8150, wait a moment, then dial 543-3025
You may also set your modem to dial 668-8150,,543-3000.

The only Internet Service Provider in Vancouver can provide you these advanced features

We Send E-Mail To Your Fax

The Adventurer Package

■ What you'd Expect from an Internet provider

- ☑ Unlimited Internet access (that's the whole world)
- ☑ No Setup Charges (no extra costs)
- ☑ Personal E-mail Address (it's like an electronic mailbox)
- ☑ 28.8K Modems (makes for fast travels)
- ☑ Full T1 Access (it's a fast data line)

$19.95

■ Other Features you wouldn't expect!

- ☑ SkyBeeper™ Automatically notifies you of a new E-mail message via your pager.
- ☑ SkyCall: Automatically call your voice pager or cellutor.
- ☑ Free Personal Home Page

The Discovery Package

$9.95

■ For those with limited travel needs

The features of Adventurer with 30 minutes a day limited access with $2 / hour for additional time.

FaxMail™ Automatically faxes your E-mail to your local fax machine. Also reads Chinese big 5 code $9.95

Options:

■ Equipment co-location to share our T1 $700/month

SkyFax™ Send your E-mail messages to fax anywhere in the world. $9.95 + long distance

SkyTalk™ Your E-mail is translated into voice and read to you. $29.95

SkyOffice™ One unique phone number lets you receive fax, E-mail or voice mail and allows you to retrieve messages anywhere in the world. Available soon. (unified message centre)

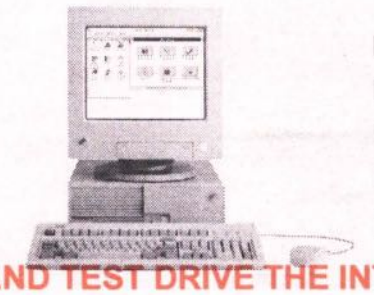
華語服務

Skybus Internet

Internet Ready Pentium Systems

■ Get 6 free months unlimited Internet Access

Intel Pentium CPU System with 8MB Memory
Trident 9440 PCI 1MB video card
Onboard PCI mod-3 IDE, 2UART serial, 1 fast parallel
1 GIG hard drive
4X CDR. SB16, Amp. Spkrs
Epson 1.44, 3.5' Floppy Drive
Premum 14' Tower case
Cypress NMB 101 keys enhanced keyboard
Daytek 14' SVGA NI, .28MM Color monitor
Window 95 included



- ■ P75 $2149
- ■ P90 $2259
- ■ P100 $2299
- ■ P120 $2419
- ■ P133 $2599

VISIT OUR W. BROADWAY LOCATION AND TEST DRIVE THE INTERNET

DPE Computers

Telephone: 604-482-1234
Fax: 604-482-1239
L8-601 West Broadway, Vancouver, B.C., Canada, V5Z 4C2
http://www.skybus.com
Skybus Internet is a division of DPE Computers in computer business since 1983 as Vancouver's No.1 network company. DPE offers internet ready computers, please call for quotes.

Using Internet Applications With Windows 95

(Contiuned from page 61)

system support for Internet services means that users will no longer have to find vendor-specific Internet files, and Internet application developers can concentrate on creating great applications such as world-wide-web browsers for their users instead of spending development cycles on low-level drivers.

Windows Sockets

Providing support for Windows Socket services allows use of any of the large collection of third-party and public-domain Internet utilities to easily connect to the Internet and access the thousands of worldwide information servers. Windows 95 includes the industry standard Windows Sockets 1.1, based on the U.C. Berkeley Sockets specification. Windows Sockets is installed when a user chooses to install either the Microsoft TCP/IP or the Microsoft IPX/SPX compatible protocol.

Most Internet tools work fine with the Windows Socket support that ships with Windows 95. Some Internet applications, however, rely on extended, proprietary versions of Windows Sockets to function. This article explains how to configure these applications so that they will work properly with Windows 95.

Configuring Specific Applications Under Windows 95

Applications Using Proprietary Windows Sockets Support

Some applications rely on extended versions of Windows Sockets for dialing and other vendor specific functions. Most of these applications install their proprietary version of WINSOCK.DLL (the file that provides Windows Sockets support) in their own application directory and work fine with Windows 95. Some applications, however install their version of WINSOCK.DLL in the Windows directory. This can lead to conflicts with Windows 95's Windows Sockets 1.1 support (which also includes a file called WINSOCK.DLL) and their application may not function correctly.

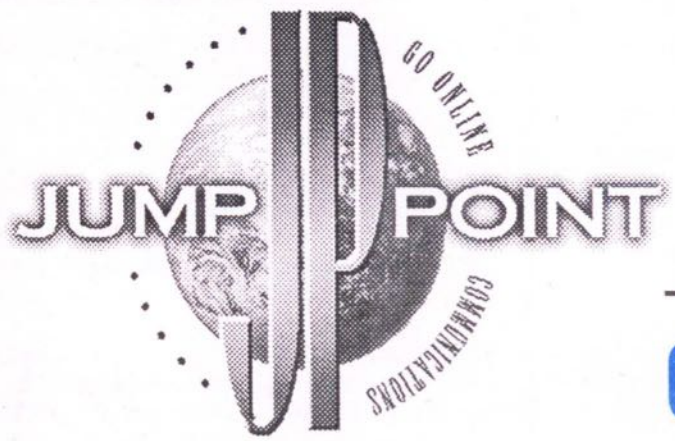
The following applications are known to install a proprietary version of WINSOCK.DLL in the Windows directory:

- *CompuServe NetLauncher 1.00.66*
- *Spry Mosaic In A Box 1.0, 1.1, 2.0*
- *Network Telesystems TCP Pro Remote*

Microsoft has been working with the vendors of the above applications for the past few months on resolving this issue. Microsoft has published guidelines for application developers that encourage them to place any vendor-specific files in the application directory, rather than the Windows directory. All of the vendors of the above products have committed to modifying their installation procedure so that it installs their version of WINSOCK.DLL in the application directory. A fix is already available from CompuServe that moves their file from the Windows directory into the appropriate application directories, and this issue will be resolved with their next release, due in September.

There are 2 scenarios where a user might experience this issue with Windows 95:

1. A user has one of the above applications, with a vendor-specific WINSOCK.DLL in the Windows directory, and upgrades to Windows 95.
2. A user is running Windows 95 with the Microsoft standard WINSOCK.DLL and installs one of the above applications, which attempts to overwrite the Microsoft standard version.



Exclusive Internet Club

Complete Internet Plan

Unlimited Time
500 Members Only
Less than 10 Users Per Line

24.95 per month

48 Hours per Month
Extended Help Hours
Excellent Accessibility

19.95 per month

28.8 Kbs Dial Up Access
Friendly Personal Service
Accessible Technical Support

GO! Online Communications

Tel: 540-0271
Fax: 540-0272

info@jumppoint.com
http://www.jumppoint.com

8am - 10pm Mon - Fri
9am - 5pm Saturday

Your Internet SERVICE Provider

Scenario 1: *Upgrading to Windows 95 With Existing Application*

If the user chooses to install either Microsoft TCP/IP or the Microsoft IPX/SPX compatible protocol when upgrading to Windows 95, the existing WINSOCK.DLL in the Windows directory is renamed WINSOCK.OLD and the Windows 95 WINSOCK.DLL is placed in the Windows directory. This renaming may also take place if the user installs the Internet Jumpstart Kit. This may cause the above applications to no longer function correctly.

Scenario 2: *Installing New Third-Party Application Under Windows 95*

If the user has installed either Microsoft TCP/IP or the Microsoft IPX/SPX compatible protocol, or the Internet Jumpstart Kit, when they install one of the above applications, the Windows 95 WINSOCK.DLL is replaced by the vendor-specific version. The application's install program may or may not prompt the user to overwrite the existing file. Immediately after installing the application, Windows 95 may detect that a system file has changed and automatically copy a backup of the Windows 95 WINSOCK.DLL from the WINDOWS\SYSBCKUP directory (created automatically by Windows 95) into the Windows directory, overwriting the vendor-specific version.

In both scenarios, the solution is to copy the WINSOCK.OLD from the Windows directory to the application's directory and rename the new copy WINSOCK.DLL. Make sure that the application's working directory and any configuration information point to the application directory, rather than the Windows directory.

Another solution is to rename the proprietary WINSOCK.OLD to WINSOCK.DLL, and to rename Microsoft's standard WINSOCK.DLL to WINSOCK.OLD. This method may have an effect on other applications that rely on the industry standard Windows Sockets 1.1 support, such as Microsoft's Internet Explorer.

Applications That Rely On Real-Mode Networking

Some applications include 16-bit, real-mode networking drivers to communicate over the Internet. These real-mode drivers may conflict with Windows 95's 32-bit, protect-mode TCP/IP implementation.

Netscape Navigator Personal Edition 1.1 is one of the applications known to include their own real-mode networking components.

Netscape Navigator Personal Edition 1.2 solves this issue by using an all-VxD (no real mode driver) solution. For Netscape Navigator Personal Edition 1.1 users, Netscape Communications will be offering an upgrade to Netscape Navigator Personal Edition 1.2. For more information, check out http://home.netscape.com/comprod/upgrades/index.html.

If you want to configure Netscape Navigator Personal Edition 1.1 to work with Windows 95, you may need to disable Windows 95's 32-bit TCP/IP, and re-enable the application's 16-bit drivers. To do this:

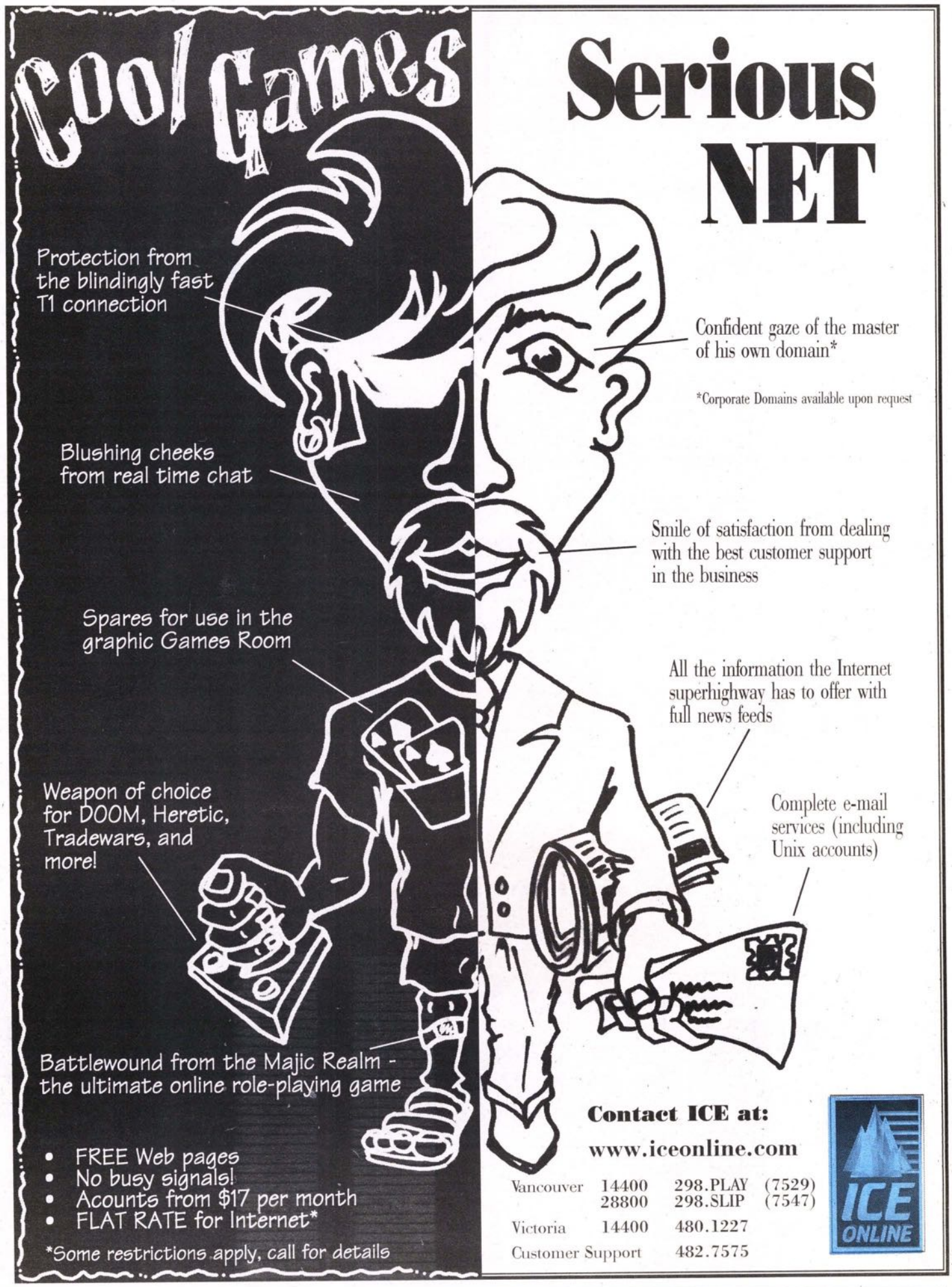
1. Open the file C:\autoexec.bat in Notepad and add 'rem' (no quotes) to the beginning of the line c:\windows\net start
2. Remove 'rem - By Windows 95 Network - ' from the line

rem - By Windows 95 Network - C:\NETSCAPE\NDIS\NETBIND (or similar).

3. Save this file.
4. Open the file C:\config.sys in Notepad and remove 'rem - By Windows 95 Network - ' from the line

rem - By Windows 95 Network - DEVICE=C:\NETSCAPE\NDIS\PROTMAN.DOS /I:C:\NETSCAPE\NDIS (or similar).

5. Save this file.
6. Close the Notepad application and restart Windows 95 so that your changes will take effect. You should now be able to use the above applications in the usual manner.



HOW-TO BOOKLETS call 254-5940

DESKTOP PUBLISHING

Corel VENTURA
Corel DRAW
Corel PHOTO-PAINT
Harvard Graphics

Step-by-step instructions
Projects, tips and tricks
Ideal for training or
self-directed learning

For training and production medea

ALL TYPES OF BUSINESS FOR SALE

From A-Z through out Western Canda. Contact Dominion Business Clearing, #2-1381 Hastings Crescent S.E. Calgary, Alberta, Canada. T2G 4C8. Fax (403) 243-9391.

SEYMOUR ARM

Best Two Acres $44,500
15% down,
owner will
finance balance
over 7 years.
Call Frances
Tel: (604) 526-5001
or
Fax: (604) 521-7944

600 How-to Books Reports & Guides You Can Reprint & Sell For Big Profits - on CD-ROM!

New Windows CD-ROM has full-texts & publishing rights to over 600 hottest selling titles, including *"The Lazy Person's Secrets to Overnight Wealth!"* Only $97, Fast delivery, Satisfaction guaranteed, 24-hrs: 1-800-272-5335, VISA, M/C welcome.

DTP Designer Wanted

Computer Player is seeking
part-time production assistant.
PC Photoshop, Pagemaker, Corel Draw.
Fax your resume to (604) 739-3589
No phone call please.

PORTABLE BOLTS

The whole business, Lock, Stock & Barrel, fits in one room. Stock includes several thousand units ready to ship, plus components for more. Purse sized, the multipurpose in-door security lock is easy to use and offers safety at home or when travelling. Retail value $35,000. Other interests force sacrifice sale at $5,850. All reasonable offers considered.

Contact: John O. Madsen, CA
Tel: 604 521-7911 Fax: 604 521-7944
E-mail: john_madsen@mindlink.bc.ca

APARTMENT SITE

1.65 acre apartment designated site in Port Coquitlam. Across street from new Burleigh Gardens development. Borders Coquitlam River green belt. Close to new Court Complex, Commuter Train & Shopping Centres.

Asking $1.925 million for this clear title property. For sale by owner: Call Frances at (604) 521-7911

Email + World Wide Web For Small Business
$249 includes : Complete Installation and Setup
Training at Your Location (groups of 1 to 5)
Beginners Welcome
Call (604) 739-7425
Rob Hickling Consulting Ltd.
"Increasing Profitability Through Computer Technology"

聯合出版公司三聯書店
暨集雅齋藝廊
Sino United Publishing (Canada) Ltd. & Tsi Art Chai Art Gallery

Books & Magazines . Stationeries & Stamps : Musical Tapes & CD's
Greeting Cards & Gift Items . Chinese Paintings & Calligraphies
Chinese Writing Brushes, Ink & Paper

圖書雜誌 賀咭禮品 唱片音帶
文具郵票 文房四寶 字帖字畫

78 - 80 East Pender St., Vancouver, B.C., Canada V6A 1T1
Tel: (604) 688-3785 Fax: (604) 688-0798

〈電腦世界〉特約發放點

Computer Player

For advertising information please call (604) 739-8266

COMPUTER Swap & Shop

Sunday, Jan. 28

Super Deals!!

SURREY'S ONE AND ONLY COMPUTER SWAP MEET

Kennedy Hall
8870 120th Street
Surrey

Buy, Sell & Trade

New and used software, hardware, monitors, printers; Parts; CD ROMs; PC's and much much more

DON'T MISS THIS ONE DAY SPECTACULAR

Lots of dealer tables, everything for home and office, computer needs

Dealer tables available INFO: 582-9443

BMP Production

We add Chinese on your tape

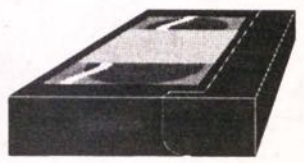
More than 50 Chinese typefaces and effects.

中文影視製作

五十多種中文字體可以錄製到錄影帶上

- Customized video production
- Computer animation
- Frame-accurate transfer
- English/Chinese titling

(604) 739-6588



Get Paid To Be On-Line!
上國際網路 又可以搵錢
$INTERNET$
免費磁碟教你如何去做 請電
Free demo disc shows you how call:
Global Online: 1-604-978-6904 Toll Free
Email: global@direct.ca

Protron
Computer Consultant
Sales and Support
Hardware Upgrade
Troubleshoot and Repair
Larry Lam
4510 Victoria Dr. V5N 4N8
Tel:876-7020 Fax:876-7207
E-mail protron@infoserve.net
http://web.idirect.com/~protron

THE ULTIMATE ADULT BBS
011-852-172-97-979
- OVER 10 GB OF EROTIC GIFS INCLUDING AN EXTENSIVE SELECTION FROM THE FAR EAST (ALL IN AMAZING HIGH QUALITY!)
- SIZZLING LIVE CHAT
- E-MAIL AND DISCUSSION FORUMS
- PLUS GAMES GALORE
- AND IT'S ALL FREE!

CALL FUNZONE NOW FOR AN EXPERIENCE YOU'LL NEVER FORGET!
FUNZONE
The Ultimate Adult BBS.
Over 18's only. International calling rates apply.
No credit cards required.

SIMM MODULE
30 PINS & 72 PINS
1, 2, 4, 8, 16 & 32 MB
MEMORY HOUSE INC.
#225 - 10711 CAMBIE ROAD
RICHMOND B.C. V6X 3G5
Phone: 821-1178 Fax: 821-1107

Dye-TechWord
"For Your MsOffice Needs"
- Custom programming
- In-home PC setup & configuration
- In-home Ms Office instruction
- Database design & upkeep
- Application design
- Desktop publishing
- Word processing
- PC Consulting

Bruce Dyer PC Consultant
Phone: (604) 439-7640 Fax: (604) 439-7131

Computer Player
Advertising information
(604) 739-8266

ABLE COMPUTER RENTALS LTD.
Ask us about
RENT TO OWN or LEASE
We Rent IBM Compatibles, 286, 386, 486 & Most Brands of Printers
Tel: (604) 521-6904 Fax: 525-4060
440 CANFOR AVENUE, NEW WESTMINSTER, B.C. V3L 3C9

☆ SPARKLE 中英電腦 ☆
Bilingual System (English/Chinese)
Custom Software Design / Programming / Support
軟件服務 程式編寫 文書處理
POS, Inventory, Bar Code, I/E Trading, Internal MIS...
Mission Critical Statistics, Bilingual Documentation ...
dBase, FoxPro, Clipper, VO, DOS/Windows...
Chinese Systems : TwinBridge V3.3, KuoChiao V6.2
Free Initial Consultation
Tel/Fax: 435-2338 (Mon/Wed/Sat 9:00am-9:00pm)

ECL COMPUTING
Your Computer Department
電腦維修 軟硬精通 電腦網路
免費估價 中英服務 品質保證
FREE ESTIMATE
SERVICE REPAIR MAINTENANCE
"No solution - No charge" Guarantee!
Tel: 266-1124 Fax: 263-9535
7979 Granville St. Vancouver

COMPUTER TROUBLES ?
SHARP NOTEBOOKS & PALMTOPS SPECIALISTS
FACTORY TRAINED TECHNICIANS
We do MORE than just hardware repair, we are a full service organization involved in all facets of the computer industry since 1977
- WE ARE AFFORDABLE
- WE ARE FAST
- WE ARE EXPERTS
- WE DO IT RIGHT

"Your place or ours!"
SHARP Authorized Service Centre
MINTRONICS
110-3320 Jacombs Rd. Richmond, B.C.
(604) 278-0783

Satellite TV
衛星電視天綫
From $995
Call (604) 294-9191
Free Chinese TV
Satellite Internet also available
Home Security Monitor System (CCTV)

Cody's
The Place for Computer Books
Westwood Mall - 3000 Lougheed Hay, Poco 464-5515
Champlain Mall - 3200 E54 Ave., Vancouver 437-5553
電腦書籍專門店
"The bookseller with experience and knowledge"

CAN YOU SEE YOUR SCREEN?
Blinds reduce glare!
WINDOW COVERING INSTALLATIONS
Blind & Drapery Sales 604-874-1865
SAM.ALBRECHT@DAFBBS.COM

中文視窗 95 的輸入法

期待已久的中文視窗 95 正式版終于問世了．筆者就中文視窗的專有功能來做一個報導．

中文視窗跟英文版的不同應是輸入法的選擇．在工作列的右方或是下方(視工作列是橫排或是直排而定)除了時鐘以外，另有輸入法的小標示．按滑鼠上的左邊按鈕，螢幕上會出現已安裝的輸入法清單．有一個箭頭指示出現用的輸入法．如果小標示是"En"，這表示現用的輸入方式是英文．如果您選用任何一種中文輸入法，在輸入法的小標示上按滑鼠的右方的按鈕，就會出現一個小視窗，提供三個選擇：第一個選擇是"螢幕小鍵盤"；第二個選擇是"標點符號"；第三個選擇是"內容"．如果要顯示小鍵盤在螢幕上，就在螢幕小鍵盤的選項上按一下，即可見到一個鍵盤顯示在螢幕上，并告訴你每一個按鍵代表的意義．使用者不必去記每個鍵的對應輸入碼，特別是選用了注音輸入法．鍵盤對應選擇有四種，每種選擇的鍵盤對應都不一樣．所以如果你使用已印好注音符號的中文鍵盤，就不能改變鍵盤對應的選擇，否則只會增加困擾．

內容的選項是用來選擇查詢組字字根的顯示方式，是否使用浮動組字視窗及是否使用相關字詞的功能．

當你鍵入一個字以後，如果這個字有相關的字詞，在組字視窗中會出現一些相關的字或詞．如果沒有任何相關的字詞在組字視窗中出現，出現的是你所選定的字根顯示方式．譬如說，你選用的輸入方式爲倉頡，而組字字根設定爲注音，當您鍵入"金"，"女"之後，再按空白鍵，在螢幕上會出現"金女"．而在組字視窗中顯示的是"ㄋㄩˇ"．您可以選用任何輸入法，設定組字字根用另外一種輸入法．這將爲您用某一種輸入法組字後，可以順便學習到另外一種輸入的方法．

組字視窗有兩種選擇，浮動式及固定式，固定式組字視窗是連接在輸入法的小圖示右邊．如果移動小圖示，組字視窗也會跟著浮動．浮動式組字視窗出現地點不定．如果有相關字詞時會出現另一個視窗．這個相關字詞的視窗一般是在組字視窗的右邊．但是如是組字視窗右方沒有足夠的位置．則相關字詞視窗會在組字視窗的左邊．輸入鍵的組合若有錯誤，組字視窗中出現的符號會顯示爲紅色．讓您知道這樣的組合是不對的．當您輸入了正確的字以後，相關字詞視窗會出現一些字詞，在每個字詞之前有一個數目字，您可以按 Shift 鍵再加上數目字選取所需的字詞．也可以直接用滑鼠選用．

中文視窗 95 的輸入法比 3.1 版的中文視窗改進了很多，不過筆者仍然認爲是否要顯示小鍵盤，應該是放在輸入法的圖示前邊．而不是要在選定輸入法後，再經過這到手續顯示或是隱藏小鍵盤．另外有一點值得稱道的是，如果您同時使用幾個不同的程式，每一個程式均可選用不同的輸入方式．各自獨立，不會有任何沖突．也許有人會問道，這有什麼好處？筆者認爲這是程式設計彈性的表現．讓您在任何環境下均能自由的選擇所喜愛的設定及使用方式，而不必每次都要重新改變．

需要切換輸入時，可按 Alt 及 Shift 鍵，或是 Ctrl 及 Shift 鍵這兩種方式可由使用者字定．3.1 視窗是用 Ctrl 家空白鍵．這各有好處．不過我認爲對于已經很熟悉 3.1 的使用方法的用者，這些小改變是會需要一段時間調查的．很多人的反應是中文視窗 95 不管是中文版還是英文版，對于新用戶可能還有吸引力，但是對于 3.1 版的老手，則不見得有那麼友善了．

About the author: *Thomas Young is president of TKC Knowledge Centre, he can be reached at (604) 273-1118.*

Twinbridge 4.0 10% Off Coupon

MS Chinese Windows 95
- Mandarin Course On CD-ROM

Welcome to Our New Showroom!

- East Asia (Chinese, Japanese, Korea) Windows 95 Systems
- Window 95 **中文手寫筆隆重登場！**
- Lexicomp **光碟大字典（英漢、漢英、英英、國語）**

（軟件 新書）

- Windows 95 Chinese Edition
- Twinbridge 4.0 for Windows 95
- Union Way 4.0 for Windows 95
- 譯經 5.0 for Windows
- 中文字庫 Windows 95 版
- Coreldraw 使用手册（新書）
- 中國草藥 CD
- 三峽風光 CD
- 學中文説國語 CD
- 精品漢筆 Windows 95
- Windows 95 中文手册（新書）
- 倉頡輸入使用手册（新書）

（硬體）

- Modem 28.8 含 Fax、Voice
- 電腦錄影機 Compeg 卡
- 宏碁多媒體電腦特價
- 二手電腦寄售買賣

（預告）

溫哥華第一份 Internet 中文電子雜誌（天下縱橫系列）即將登場，請留意下期介紹。

(*特設 WWW 設計課程，免費贈送 Internet Home Page)

（遊戲活動）

〈同級生 2〉最受歡迎女主角選拔活動：
填寄以下意見及你的姓名地址，有機會獲得（電腦遊戲雜誌）一份，截止日期 2 月底。

・你最喜愛的同級生 2 女主角是：_____

*請以郵寄、FAX、Email 寄到本公司的地址

Learning Chinese on CD-ROM

* Complete 170 Lessons
* English Dictionary, Translation Software
* Simplify and Traditional Characters
* Character Writing Tutor
* Ping Ying Tutor
* Twinbridge Special $ 249.00
* MS Windows Chinese
* Chinese Editor for Windows 95
* Vietnamese, Korea, Japanese Editor
* Learning Chinese on CD-ROM Basic Version $ 28.00

MultiMedia Chinese Software Supply Centre 軟體銀行・排版系統

BIS 恒碁中文電腦公司
BIS Information Systems
#203-124 E. Pender Street, Vancouver B.C. V6A 1T3
Tel: (604)688-8916/930-9108
Fax: (604)688-8916
Email: Waynelee@Direct.ca

臺灣電腦顧問公司
COMPULINK SYSTEMS INC.

各類中文書籍

1. BBS & Internet 入門 （臺灣松崗出版社出版）
2. Word 6.0 中文版快學秘笈 （臺灣第三波出版）
3. 例說 Word 6.0 中文版 （臺灣第三波出版）
4. AmiPro 3.0 中文版入門 （臺灣第三波出版）
5. 例說 AmiPro 3.0 中文版 （臺灣第三波出版）
6. 即學即用 AmiPro 3.0 （臺灣第三波出版）

電話：(604) 657-4919 (Mon-Sat, 13:00-21:30)

Demand➤Print SYSTEM®

Intelligent solutions to short-run printing problems.

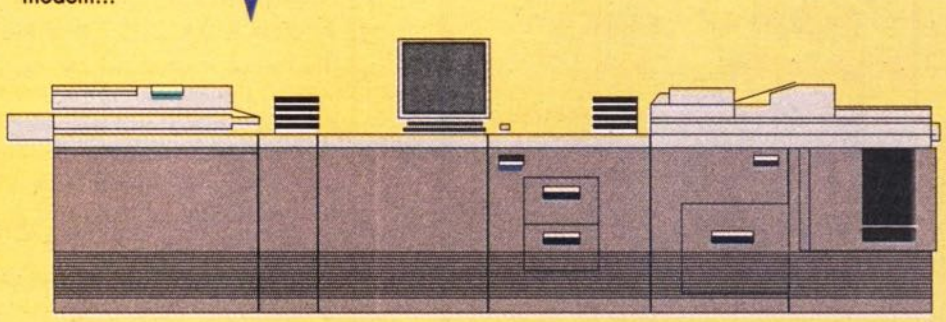
ELIMINATE:

- **The cost of labour-intensive pre-press work.**
- **The set-up costs for reruns.**
- **Large inventories of printed documents.**
- **The high cost of colour separations.**

Samco Printers Ltd. can image a file direct from disk or modem on a wide variety of paper (including cover weights), at a resolution shy of an imagesetter's. We provide a complete bindery service to turn your file into a great-looking professional product!

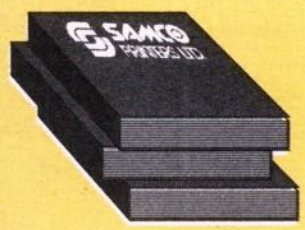
Your Mac or PC compatible files can be brought on disk, or sent to us via modem...

BLACK & WHITE



...where we can output black and white files at 600 dpi resolution, on almost any paper stock

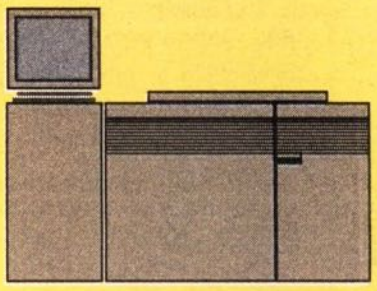
...fantastic halftones (Great for newsletters flyers, and reports!)



...binding & collating with heavy covers (Technical manuals, short run books)

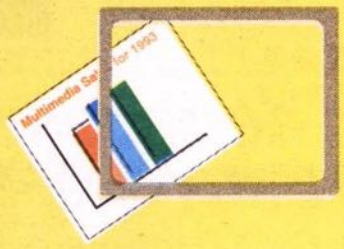
...or with printed & inserted tabs! (binder pages, catalogues)

COLOUR

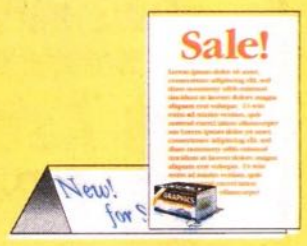


...for output on our colour printer, which excels at continuous tone & spot colour

...making it perfect for short run documents. (Flyers, client wowing comps)



...presentations, & transparencies (Liven up your pitch)



...and signage or POP displays! (11"x17" offers great flexibility)

SAMCO PRINTERS LTD.
3rd Floor, 830 West Pender Street,
Vancouver, B.C. V6C 1J8
Fax: (604) 681-1775
(604) 683-6991

"Leaders in Digital Printing"

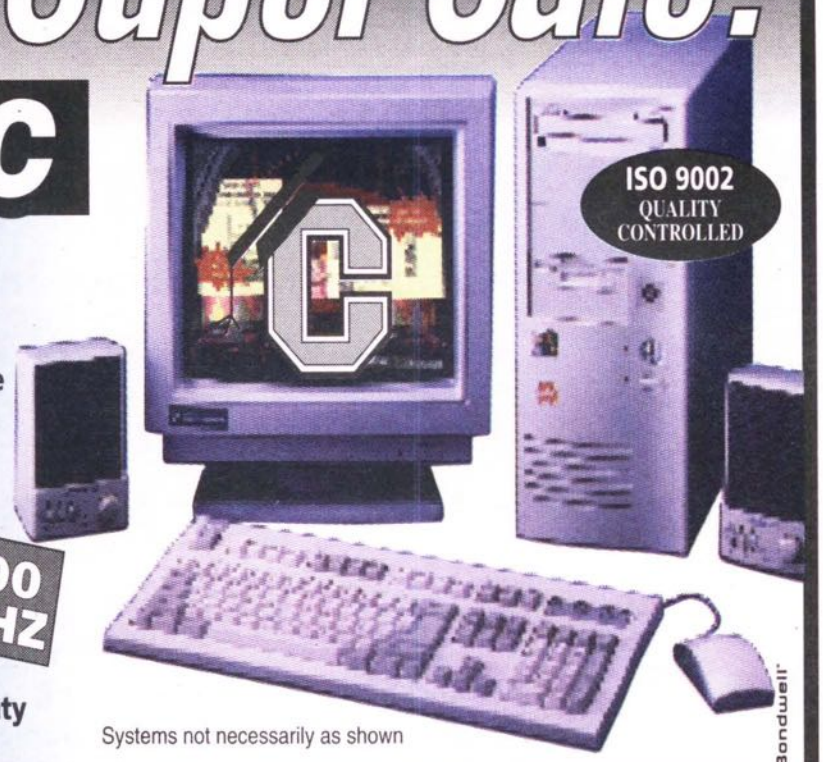
Campus Super Sale!

P100 MPC

- Intel Pentium 100 processor
- PCI local bus slots • 8MB
- Upgradable to 256K Pipeline burst cache
- 1Gigabyte hard drive • 3.5" floppy drive
- Quad (4x) speed CD ROM drive
  Upgrade to 6x Speed CD-Rom $88
- Dual shielded multimedia speakers
- 16-Bit Stereo sound card
- 1MB PCI SVGA video card
- 14" Non-Interlaced monitor .28dp
- 1 Parallel / 2 - 16550 Serial Ports
- Windows '95 & Mouse • 3 Yr Ltd Warranty

100 MHZ

ISO 9002 QUALITY CONTROLLED



Systems not necessarily as shown

CCL P100 MPC

$1998

Internet Upgrade Package

Includes 28.8K Data/FaxModem,
Free activation and 1 month Internet service

$228

with system purchase

P120 MPC

- Intel Pentium 120 processor
- PCI local bus slots • 8MB EDO RAM
- Upgradable to 256K Pipeline burst cache
- 1Gigabyte hard drive • 3.5" floppy drive
- Quad (4x) speed CD ROM drive
  Upgrade to 6x Speed CD-Rom $88
- Dual shielded multimedia speakers
- 16-Bit Stereo sound card
- 1MB PCI SVGA video card
- 14" SVGA monitor .28dp, 1024x768
- 1 Parallel / 2 - 16550 Serial Ports
- Windows '95 & Mouse • 3 Yr Ltd Warranty

120 MHZ

CCL P120 MPC

$2238

All Systems Manufactured by Bondwell

* The Intel Inside Logo is a registered trademark of Intel Corporation

intel inside pentium PROCESSOR

RECEIVE COMPTON'S '96 CD-ROM ENCYCLOPEDIA
when paid by Cash,Bank draft / Interac

Upgrade to 6x Speed CD-Rom drive above systems $88

B.C. Residents toll free to order 1-800-717-9888 English or French

CAMPUS COMPUTERS

UBC	SURREY	COQUITLAM	VICTORIA
2162 Western Parkway	#408-7380 King George Hwy.	#408 - 100 Schoolhouse	#108 - 2605 Bridge St.
FAX 228-8338	FAX 604-501-0338	FAX 517-8383	FAX 920-9838
228-8080	501-0328	517-8080	920-9828

KELOWNA (604) 862-3188 / CALGARY (403) 259-2882 / EDMONTON (403) 433-2882

All prices are cash prices - Ltd Qty. Prices & Specifications subject to change without notice. *** Some areas may not be eligible for on-site service. ** All brand names and trademarks are the property of their respective owners.
*Lease based on 36 month business lease. Options after 36 month lease a) Return equipment b) Trade-up c) 10% Buyout.

Computer Player

Vol. 5 No. 2

Publisher/Editor	Liqin Chen
Associate Editor	Alan Zisman
Mac Editor	Chow Yen Chong
Marketing Director	Jane L. Ding
Contributing Writers	Jim Chow Swee-Sim Tan Rick McLaughlin Dan Debellis David Aderson John Hamm Gordon Pritchard Sean Elrington Andrew David Iain Black Thomas Young John Madsen Richard K. Acton WYSIWYG Prepress
Advertising Sales	Jamie Leighton Li Ding Randy Chaster
Production Manager	Kent Chen
Production Staff	Kitty Kit Ying Chow Sherly Ho
Cover Photo	WYSIWYG
Administration	Farida Aini
Distribution	MediaNet Distribution

Computer Player is a monthly bilingual computer magazine published by *Our Computer Ltd.*

The content of **Computer Player** is subject to copyright. Material and advertising designed by **Computer Player** in this publication may not be reproduced in any form without permission. All rights reserved. The opinions expressed in articles are not necessarily those of the publisher.

Computer Player welcomes your suggestions, comments and ideas. Share it with us by phone, mail, e-mail to fax at the numbers or address below:

Our Computer Player Ltd.
900-1788 West Broadway
Vancouver B.C. Canada V6J 1Y1
Phone: **(604) 739-8266**
Fax: **(604) 739-3589**

Web Site:
http://www.computer-player.com/cp
Internet: computer_player@mindlink.bc.ca
CompuServe: 76640,1756
BBS: MindLink! (604) 528-3500 (Log on with the name "Computer Player Guest")

Subscription applications and notices of changes of address must be made in writing to above address.

Printed in Canada ISSN 1188-9462
Canada Post Canadian Publications Mail Sales Product Agreement No. 170 437
Postage Paid at Vancouver B.C.

Subscriptions

To have 12 issues of *Computer Player* mailed directly to your home or office, please send a cheque or money order for $25.00 to *Computer Player Ltd.*; U.S. subscriptions please send $45.00 in US funds; Overseas please send $60.00 Canadian.

GET THE NET!

ABSOLUTELY NO HOURLY CHARGES

Western Canada's Largest Internet Provider

INTERNET DIRECT

www.direct.ca

Call Today!

- *Experienced Technical Support*
- *Friendly Customer Service*
- *Individual Access Accounts*

*$19.95** *per month*
**some restrictions apply*

(604) 488-1900
FAX: (604) 602-1700
TOLL FREE: 1-800-987-8884
E-mail: support@direct.ca

Introducing the

My Internet™

family of products.

Internet

PACKAGES INCLUDE:

• Full Flat Rate Internet Access • No Hourly charges
• One time start-up fee • First month of Internet Access • Free connection software

VALUE PACK SERIES ALSO INCLUDE:

• *THE INTERNET FOR DUMMIES TEXT BOOK* • Limited Edition Mousepad

ACCESS 4 KIDS INCLUDES:

• *Net Nanny* - Internet Protection For Your Children

the original all in one

the same thing but for Win.95

From Our Family Tree to Yours.

The Perfect Christmas Gift Available at:

LONDON DRUGS

DOPPLER COMPUTER SUPERSTORE

FUTURE SHOP DISCOUNT SUPERCENTERS

a&b sound

CAMPUS COMPUTERS

Book Warehouse